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(For Atlas and Gazetteer see End of Vol. V.)

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C

Covenanters, in Scottish history, the name given to the party which struggled for religious liberty from 1637 on to the revolution; but more especially applied to the insurgents who took up arms in defense of the Presbyterian form of Church government. The Presbyterian ministers who refused to acknowledge the bishops were ejected from their parishes and gathered around them crowds of their people on the hillsides to attend their ministrations. The first outbreaks took place in the hill country on the borders of Ayr and Lanark shires. The murder of Archbishop Sharp on Magus Moor, and a skirmish near there alarmed the government, who sent troops to put down the insurgents, who had increased in number rapidly. The two armies met at Bothwell Bridge, where the Covenanters were totally defeated June 22, 1679.

In consequence of the rebellious protest called the Sandquhar Declaration, put forth in 1680 by Cameron, Cargill, and others, as representing the more irreconcilable of the Covenanters, and a subsequent proclamation in 1684, the government proceeded to more severe measures. An oath was now required of all who would free themselves of suspicion of complicity with the Covenanters; and the dragoons who were sent out to hunt down the rebels were empowered to kill anyone who refused to take the oath. After the accession of William some of the extreme Covenanters refused to acknowledge him owing to his acceptance of Episcopacy in England, and formed the earliest dissenting sect in Scotland.

Covent Garden, corrupted from Convent Garden, from having been originally the garden of the Abbot of Westminster, is a spacious square in London, celebrated for a great market held within it of fruit, vegetables, and flowers.

Coventry, a city in England, county of Warwick, 85 miles N. W. of London. It was formerly surrounded with lofty walls and had 12 gates, and was the see of a bishop early conjoined with Lichfield. Parliaments were convened here by the earlier monarchs of England. Pageants and processions were celebrated in old times, and a remnant of these still exists in the processional show in honor of Lady Godiva. Population (1901) 69,877.

Coverdale, Miles, the earliest translator of the Bible into English; was born in Yorkshire, England, in 1487. He was educated at Cambridge, and was ordained priest in 1514. He was led some years afterwards to embrace the reformed doctrines, and, having gone abroad, assisted Tindall in his translation of the Bible. In 1535 his own translation of the Scriptures appeared. In 1551 he was appointed Bishop of Exeter, but was ejected on the accession of Mary, and thrown into prison. After two years' confinement he was liberated, and proceeded first to Denmark, and subsequently to Geneva, where he was employed in preparing the Geneva translation of the Scriptures. On the accession of Elizabeth he returned to England, and held for a short time the rectory of St. Magnus, London Bridge. He died in London, in 1568.

Cow, the female of the bovine species, of which the bull is the male. Like other domestic animals it has run into numerous varieties, and its primitive uniformity has given rise to manifold diversity.

Cowan, Frank, an American lawyer and writer; born in Greensburg, Pa., Dec. 11, 1844. Making the tour of the world in 1880–1881 and 1884–1885, he entered Korea before that country had made treaties with any of the other nations.

Cowbane, or **Water-hemlock,** a perennial, umbelliferous, aquatic plant, producing an erect, hollow, much-branched, striated stem three or four feet high, furnished with dissected leaves. It is highly poisonous.

Cow-berry, the red whortleberry, a shrub of high lands in North America, Europe, and Asia, has evergreen box-like leaves, and produces a red acid berry used for jellies.

Cowboys, in the American Revolution, a band of American Tories who infested the neutral ground of Westchester county, N. Y., robbed the Whigs and Loyalists, and made a specialty of stealing cattle. The word cowboys is now used to designate the men who have charge of the cattle on the vast ranges in the W. and S. W. of the United States. Many of them were enlisted in two regiments of cavalry for the war with Spain, and, under the popular name of "Rough Riders," greatly distinguished themselves in the early part of the campaign against Santiago, in Cuba.

Cowes, a British seaport on the N. coast of the Isle of Wight. It is built on both sides of the river Medina, dividing it into two towns, East and West Cowes. The town is the headquarters of the Royal Yacht Club, and a place of very fashionable resort.

Cow-itch, Cow-age, or **Cowhage,** the stinging hairs of a twining annual, with pendulous racemes of dark-colored flowers, which appear in India in the rainy season. The legume, which is shaped like the letter S, is clothed with hairs which are easily detached and stick on the skin, producing intolerable itching.

Cow Pea, called also cow-grass, etc., is neither a pea nor a grass, but is a trefoil or clover.

Cowper, William, an English poet; born in Berkhampstead, Nov. 15, 1731; was the great-nephew of the Lord-Chancellor Cowper. In addition to translating Homer, he wrote "The Task," the best of all his poems; "Tirocinium"; and a host of smaller works. Died in Norfolk, April 25, 1800.

Cow-pox, any disease producing pox on the udder or other parts of a cow. Edward Jenner discovered that there were several of these In a special sense it is that particular cutaneous disease affecting the udder of the cow, which, being transferred to the human frame, either gives an immunity from smallpox or diminishes its violence. Jenner thought that it might be practicable to propagate cowpox as a preservative against smallpox, by inoculating some human being from the cow, and from that person transferring the matter to another and another of the community till protection was obtained for all. This was the origin of vaccination.

Cowry, the English name of molluscous genus. The money-cowry is a native of the Pacific and Eastern seas. Many tons are annually shipped to Great Britain, whence they are again taken as money to be used in commercial transactions with the tribes of Western Africa. There is another species used locally among the Eastern islands for the same purpose.

Cowslip, a well-known plant of the same genus as the primrose, oxslip, etc., but differs in appearance.

Cow Tree, a large tree, which when wounded emits a highly nutritious milky juice. It is chemically akin to cow's milk. According to Humboldt, it grows only on the Cordilleras of the coast of Caracas.

Cox, Jacob Dobson, an American soldier; born in Montreal, Oct. 27, 1828; was graduated at Cambridge in 1844, becoming a lawyer; but upon the outbreak of the Civil War was made Brigadier-General of Ohio Volunteers. In 1862 he became Major-General of United States Volunteers, and in 1864 commanded a division at Nashville. He was elected governor of Ohio in 1865, and in 1869 became Secretary of the Interior in President Grant's cabinet. He died in Magnolia, Mass., Aug. 4, 1900.

Cox, John, a Canadian educator; born in London, England, in 1851. He entered the University Extension movement, and in 1889 went to Canada, becoming Professor of Physics in McGill University, a post he has since retained.

Cox, Kenyon, an American painter; born in Warren, O., Oct. 27, 1856. He studied in Paris under Duran and Gerome, settling in New York in 1883 as a portrait and figure artist. He did two decorations in the Library of Congress and similar works elsewhere.

Cox, Palmer, an American artist and writer for young people; born in Granby, Quebec, April 28, 1840. Since 1875 his home has been in New York. He is best known as the originator of the "Brownies," a series of funny pictures and verse for children.

Cox, Samuel Sullivan, an American statesman and author; born in Zanesville, O., Sept. 30, 1824. He served in Congress, and became minister to Turkey. He died in New York, Sept. 10, 1889. A statue was erected to his memory in New York city by the letter-carriers, whose interests he had advocated in Congress.

Coxe, Arthur Cleveland, an American writer, and second Bishop of the Protestant Episcopal Church in the Diocese of Western New York; born in Mendham, N. J., May 10, 1818; died in Clifton Springs, N. Y., July 20, 1896.

Coxeyites, the followers of Jacob S. Coxey, of Massillon, O., who, during the financial depression existing in the United States in November, 1893, announced that he intended to lead an army of 100,000 of the unemployed people to Washington, to petition Congress for the issuance of $500,000,000 in non-interest bearing bonds, to be used for the improvement of roads. Coxey left Massillon on March 25, 1894, at the head of 122 people, and reached Washington May 1. In the attempt to make a speech from the Capitol steps, he was accused of stepping on the grass, and with Carl Browne, was imprisoned for 20 days.

Coyote, the American wild dog or prairie-wolf. The coyote is virtually a wild dog and breeds with the domestic dog. In general appearance the coyote resembles the wolf.

Cozumel, an island in the Caribbean Sea, off the coast of Yucatan.

Cozzens, Frederick Swartwout, an American humorist; born in New York city, March 5, 1818; was a merchant, to whom literature was a recreation. He died in Brooklyn, N. Y., Dec. 23, 1869.

Crab, a popular name for all the ten-footed, short-tailed crustaceans, distinguished from the lobster from the shortness of their tail. They easily lose their claws, which as readily grow again. The first pair of limbs are furnished with strong claws, and are used for grasping food and other objects. They generally live on decaying matter, but some varieties live on vegetable matter. Most crabs inhabit water, but some varieties occupy the land, only going to water to spawn. Several species are highly esteemed by epicureans as food.

Crab Apple, a small, wild, very sour species of apple, from which a fine jelly is made.

Crabb, George, an English lawyer and philologist; born in Palgrave, England, Dec. 8, 1778; died in Hammersmith, England, Dec. 4, 1854.

Crabbe, George, an English poet; born in Aldborough, Suffolk, in 1754; died in Trowbridge, Wilts, in 1832.

Crab Spider, or **Matoutou,** a spider which may be at once known by the shape of its mandibles and the terrible claws which proceed from them. The great crab spider preys on young birds and other small vertebrates, instead of limiting itself to the insects, and similar beings, which constitute the food of the generality of the spider race. The falces or talons of this spider are of enormous size, and when removed from the creature and set in gold, they are used as toothpicks, being thought to possess some occult virtue which drives away the toothache.

Crabtree, Charlotte, (best known by her stage name Lotta), an American actress; born in New York in 1847. Lotta made her first appearance on the stage when 6 years old in an amateur performance. At the age of 10 she played the part of Gertrude in the "Loan of a Lover" at Petaluma. She soon became a favorite with the American public in pronounced comedy, playing parts especially written for her. Her chief successes have been as "Topsy," "Sam Willoughby," "The Little Detective," "Nitouche." She retired with a fortune.

Cracow, the old capital of Poland, in 1815-1846 capital of a republic of the same name now forming part of Austrian Galicia; is on the left bank of the Vistula, where it becomes navigable, and consists of Cracow proper, or the old city, and several suburbs. It is the see of a bishop, is well built and regularly fortified. The cathedral, a fine old Gothic edifice, contains monuments of many Polish kings, of Kosciusko, etc. The university was founded in 1364, but gradually fell into decay, and was reorganized in 1817. It has a library of 300,000 volumes. On a hill near the town stands the monument of Kosciusko, 120 feet high. Pop. (1900) 91,323.

Cradle, or "rocker," a mechanical contrivance used in placer mining, consisting of a box on rockers and moved by hand, used for washing out the gold-bearing soil.

Cradle of Liberty, a name by which Faneuil Hall, in Boston, is known. During the Revolution it was the favorite meeting place of the Americans. The name is also sometimes applied to the city of Boston.

Crafts, Wilbur Fisk, an American clergyman; born in Freyburg, Me., Jan. 12, 1850; preached eight years as a Methodist Episcopal minister; in 1880 joined the Congregational church. Later he engaged in literary work. He is secretary of the American Sabbath Union, and prominent in reform work; author of "Successful Men," "The Sabbath for Man," etc.

Craik, Dinah Maria Mulock, an English author; born in Stoke-upon-Trent in 1826. In 1865 she married George Lillie Craik, a partner in the publishing house of Macmillan and Company, and spent a period of quiet happiness and successful literary industry at her home in Kent, where she died Oct. 12, 1887.

Craik, George Little, a Scotch writer and publisher; born 1799; died 1866.

Craik, Georgiana Marion, an English novelist; born in London in April, 1831.

Cramp, an irregular spasmodic contraction of the muscles of the whole or different parts of the body, causing most severe pain by the knotty and hardened state into which their fibers are contracted. Though it may involve the greater number of the muscles at once, the parts most generally affected are those of the feet, legs, thighs, abdomen, and arms.

Cramp, Charles Henry, an American shipbuilder; born in Philadelphia, May 9, 1828. He was graduated at the Central High School and entered the shipyards of his father, William Cramp. He soon established the prestige of the firm of William Cramp & Sons, which he incorporated and of which he became president. Their shipyards in Philadelphia are the most extensive in the United States, executing contracts for the governments of the United States, Russia, Japan, etc., and exercising a great influence upon modern naval development.

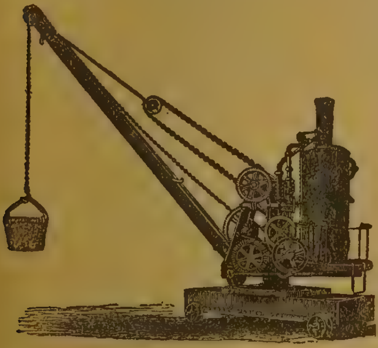
Cranach, or **Kranach, Lucas,** a German painter; born in 1472. His works, chiefly portraits and historical subjects, are numerous and much prized. He died in 1553. His son, Lucas, also gained great distinction as a painter.

Cranberry, a plant, having also the book-name of the marsh whortleberry. It is found in bogs. The berries are used for preserves and pies.

Cranbrook, Gathorne Gathorne-Hardy, Earl, an English statesman; born in Bradford, Oct. 1, 1814. He was Secretary of State for India (1878-1880), and Lord President of the Council (1885-1892).

Cranch, William, an American jurist; born in Weymouth, Mass., July 17, 1769. He was appointed an Associate Judge of the United States Circuit Court for the District of Columbia in 1801; and Chief-Justice of that court in 1805. He held this office till his death, and during a period of over half a century had only two decisions overruled by the Supreme Court. He died in Washington, D. C., Sept. 1, 1855.

Crane, a machine for lifting weights, worked either by hand, or by steam, or by hydraulic power. The most common hand form consisting of an upright revolving post and a projecting arm, the jib with a fixed pulley at its extremity. The lifting chain or rope is secured to the weight, passes over the fixed pulley, and then round a drum or cylinder; suitable toothed-wheel gearing worked by a handle revolves this drum, and thus winds up or unwinds the rope or chain, and so raises or lowers the weight.



STEAM CRANE.

Crane, a genus of birds belonging to the order Grallæ, or Grallatores. These birds are generally of considerable size, and remarkable for their long necks and stilt-like legs, which eminently fit them for living in marshes and situations subject to inundations, where they usually seek their food. This is principally of vegetable matter, consisting of the seeds of various plants or grains plundered from grounds recently plowed and sown. They also devour insects, worms, frogs, lizards, reptiles, small fish, and the spawn of various aquatic animals. They build their nests among bushes or on tussocks in the marshes, constructing them of rushes, reeds, etc., surmounted by some soft material, so high that they may cover their eggs in a standing position. The cranes annually migrate to distant regions, and perform voyages astonishing for their great length and hazardous character.

Among North American species are the whooping crane and the brown or sand-hill crane. The first-named derive their trivial appellation from their loud, clear, piercing cry, which may be heard at the distance of two miles. They are very shy and vigilant, and consequently shot with difficulty. Their general color is pure white. The brown or sand-hill crane is of an ash color, generally, with shades or clouds of pale brown and sky-blue; brown prevails upon the shoulders and back. It is a very stately bird, standing when erect fully 5 feet high, and measuring 8 or 9 across the wings. The tail is quite short, but the feathers pendent on each side of the rump are very long, of a delicate silky softness, and sharp-pointed. The crown of the head is bare of feathers, and of a reddish rose color, but thinly barbed with a short, stiff, black hair.

Crane, Stephen, an American story writer; born in Newark, N. J., Nov. 1, 1870. He died in Badenweiler, Germany, June 5, 1900. His "Red Badge of Courage" excited a wide-spread interest in its author and seemed to presage a career of more than ordinary brilliancy. He broke off his college career to become a journalist. During the Spanish-American War, he was a reporter in Cuba for the New York "Journal."

Crane, Thomas Frederick, an American scholar and author; born in New York July 12, 1844. He became Professor of Romance Languages at Cornell University in 1881.

Crane, Walter, an English painter; born in Liverpool Aug. 15, 1845; the son of an artist, Thomas Crane (1808–1859). He himself was trained as an artist, and his earlier as well as much of his later work consists of book illustrations. Since 1888 a member of the Royal Society of Painters in Water-colors, he was in 1893 appointed art director to the city of Manchester. He is prominent in the English Socialist movement.

Crane, William H., an American actor; born in Leicester, Mass., in 1845. He made his first appearance on the stage when 18 years old and soon won recognition as a comedian. He played "David Harum" in 1900 and attained great popularity in that role.

Crane-fly, the typical species is popularly known as daddy-long-legs.

Craney Island, an island in Norfolk Co., Va., near the mouth of the Elizabeth river W. of the entrance. Here is situated a lighthouse 50 feet in height, standing on an iron pier. There are also government powder magazines on the island.

Craniology, a scientific study of the cranium.

Crank, in machinery, a lever or arm on a shaft, driven by hand (e. g., a winch-handle), or by a connecting rod, its object being to convert reciprocating motion into rotary motion.

Cranmer, Thomas, Archbishop of Canterbury; born in Aslacton, Nottinghamshire, July 2, 1489. The opinion which he gave on the question of Henry VIII.'s divorce from his first wife, Catharine of Arragon, recommended him to that monarch, who employed him to vindicate the measure, and sent him, in 1530, with other envoys, to maintain his view before the Pope. He took with him the opinions which had been obtained from the foreign universities in favor of the same view. His mission was fruitless. On his way home, he visited Germany, and at Nurnberg married a niece of Osiander. After his return he was raised by papal bull to the archbishopric of Canterbury, in which office he zealously promoted the cause of the Reformation. Through his means the Bible was translated and read in churches; and he greatly aided in suppressing the monastic institutions. A few weeks after his appointment he pronounced, in a court held at Dunstable, the sentence of divorce of Catharine, and confirmed the king's marriage with Anne Boleyn. In 1536, when Anne Boleyn was destined to lose her reputation and her life, he stooped to promote the sentence of divorce. This and other compliances with the monarch's will insured him the gratitude of Henry, who upheld him in all his contests with Bishop Gardiner and others who accused him of heresy and faction. By Henry's will he was appointed one of the council of regency to Edward VI. On the accession of Mary, he was committed to the Tower, along with Latimer and Ridley. On March 21, 1556, he suffered martyrdom, as his fellow-reformers had done, opposite Baliol College.

Crannog, a fortified lake dwelling, of which many are to be found in Ireland. They are supposed to have been formed about the 9th or 10th century.

Cranston, Earl, an American clergyman; born in Athens, O., June 27, 1840. He was graduated at Ohio University in 1861 and served on the Union side throughout the Civil War, rising to a captaincy. In 1867 he entered the Methodist ministry, and in 1896 he was made a bishop, his diocese including China and the Orient.

Crape, a gauzy fabric made of raw silk, and woven without crossing. Uncolored, or gaily dyed, it is a rich shawl-stuff. Colored black and crimped, it is a mourning goods.

Crassus, Marcus Licinius, a Roman triumvir, surnamed DIVES (the rich), on account of his vast riches; born about 115 B. C. He was exceedingly fond of wealth, and also exceedingly skillful and by no means scrupulous in the ways and means of accumulating it. As he was one of the most influential men in Rome, and very ambitious, his friendship was sought by Cæsar, who formed with him and Pompey the first triumvirate in 60 B. C. The power of the triumvirs secured the reëlection of Pompey and Crassus as consuls in 55 B. C., and according to the Trebonian law Syria and the two Spains were assigned to the consuls for five years, Gaul and Illyricum falling to Cæsar. Crassus obtained Syria as his province, and envious of the military glory that both Pompey and Cæsar had attained, now determined to rival them. Accordingly, without the sanction of the senate, and in violation of treaties, he proceeded to attack the Parthians, reckoning on an easy victory, and expecting to obtain enormous treasures. He was taken at a disadvantage on the open plains of Mesopotamia by Surenas, the general of the Parthian king Orodes, and perished with his son and a large portion of his troops, 53 B. C. His head was sent to Orodes, who caused melted gold to be poured into the mouth, in scorn of the greed of Crassus.

Crater, (a cup), the central cup-shaped cavity in the summit of a volcano through which the lava, stones, etc., are for the most part ejected.

Crater Lake, a small lake in the Cascade Mountains, in Oregon, remarkable for its wall of perpendicular rock, from 1,000 to 2,000 feet high.

Craven, Alfred Wingate, an American engineer; born in Washington, D. C., Oct. 20, 1810. His most important work was in New York, in connection with its sewerage, its supply of Croton water, and the improvement of Fourth Avenue. He was a founder, director many years, and president in 1869–1871 of the American Society of Civil Engineers. Died in Chiswick, England, March 29, 1879.

Craven, Thomas Tingey, an American naval officer; born in Washington, D. C., Dec. 30, 1808; joined the navy in 1822; was promoted captain in June, 1861. In 1862 he was placed in command of the "Niagara," and during the remainder of the war he served along the coasts of England and France. He was promoted rear-admiral in October, 1866; retired in December, 1869. He died in Boston, Mass., Aug. 23, 1887.

Craven, Tunis Augustus Macdonough, a brave American naval officer; born Portsmouth, N. H., in 1839. After an honorable career in various naval duties, he was in command of the monitor "Tecumseh," with Admiral Farragut's fleet, in Mobile Bay, August 5, 1864. When the monitor was struck by a torpedo and sinking, and there was opportunity only for Craven or the pilot to escape, Craven deliberately told the pilot to go first, and perished himself.

Crawfish, or **Crayfish,** a name of various crustaceous animals, the common crawfish being the river lobster. It lurks under stones or in holes in the banks. Its food consists of small mollusks or fishes, the larvæ of insects, and almost any sort of animal matter. Some crawfish by their burrowing habits injure mill-dams and the levees of the Mississippi.

Crawford, Francis Marion, an American novelist; born in Tuscany, Italy, Aug. 2, 1853; son of THOMAS CRAWFORD. He was educated at Concord, N. H.; Trinity College, Cambridge; Karlsruhe, and Heidelberg. At Rome he devoted himself to the study of Sanskrit, and during 1879–1880 was engaged in press work at Allahabad, where he was admitted to the Catholic Church. He was selected by the government committee to write the National Ode at the centennial of the American Constitution, Sept. 17, 1887. He has written many popular books.

Crawford, Thomas, an American sculptor; born in New York city, March 22, 1814. He performed important works for the National Government and State of Virginia. He died in London, Oct. 16, 1857.

CRAWFISH.

Crawford, William Harris, an American statesman; born in Amherst county, Va., Feb. 24, 1772. In 1783 he settled in Columbia county, Ga., and was elected to the United States Senate to fill a vacancy in 1807 (fighting two duels during the canvass); was reëlected for a full term in 1811; was chosen president of the Senate pro tem. in 1812; and, refusing the secretaryship of war, was appointed minister to France in 1813. Two years later he was appointed Secretary of War, and the next year became Secretary of the Treasury, and held the latter office till March, 1825. He was urged as a candidate for the Presidency several times, received the nomination in 1824, and in the election had 41 electoral votes. No choice for President having been reached, the election was decided in the House of Representatives, but meanwhile Crawford had been stricken with paralysis, which precluded his effectual candidacy. He died, Sept. 15, 1834.

Crayon, a colored pencil consisting of a cylinder of fine pipe-clay colored with a pigment.

Cream, the most oily part of milk. It is specifically lighter than the other constituents, and therefore rises to the surface.

Creameries, Coöperative. It will be news to most Americans that $30,000,000 of business is done annually in coöperative creameries in the United States. Curiously enough it is in creameries alone that any coöperative effort worthy of mention has been made in America. In Minnesota 450 out of 650 creameries are coöperative; in Wisconsin 1,000 out of 7,000, and in Iowa more than one-third. In Vermont there is one coöperative creamery that uses the milk of 3,000 cows and turns out 10 tons of butter a day.

Cream of Tartar, a salt that exists in grapes, tamarinds and other fruits; the dregs of wine also contain a considerable quantity of it. It is used in medicine, also in calico printing and in dyeing. Cream of tartar is adulterated with sawdust, gypsum clay, chalk, flour, etc.

Creasote, or **Creosote,** an impure creasol, mixed with phenol. Wood creasote has powerful antiseptic power. Wood smoke contains this substance, hence its power of preserving meat. Creasotum is obtained by distilling wood-tar. It is a colorless liquid, with a strong empyreumatic odor.

Creasy, Sir Edward Shepherd, an English historian; born in Bexley, Kent, in 1812. In 1860 he was made Chief-Justice of Ceylon, receiving at the same time the honor of knighthood. He died Jan. 27, 1878.

Creatine, is obtained from the muscular flesh of mammalia, birds, reptiles, and fishes. It has been found in the blood and urine and in the brains of pigeons and dogs.

Creche, a public nursery where, for a small payment, the children of women who have to go out to work are fed, nursed, and taken care of during the work hours of the day.

Crecy-en-Ponthieu, or **Cressy,** a village in the French Department of Somme, on the Maye, 12 miles N. of Abbeville. Crecy is celebrated on account of the brilliant victory obtained here, Aug. 26, 1346, by Edward III., with 40,000 English soldiers, over a French army amounting, according to Froissart, to 100,000 men under the command of the Count of Alencon. In this great battle perished the flower of the French chivalry, as well as the blind King of Bohemia, who was fighting on the side of France. The battle of Crecy was one of the first in which cannon were used by English troops.

Credit, in economics, is the postponement agreed on by the parties of the payment of a debt to a future day. The term is also applied to the general credit of individuals in a nation. So we speak of the credit of a bank when general confidence is placed in its ability to redeem its notes, and the credit of a mercantile house rests on its supposed ability and probity, which induce men to trust to its engagements.

Credit, Letter of, an order given by bankers or others at one place to enable a person to receive money from their agents at another place.

Credit Foncier, a mode of raising money on land in France, the peculiarity of which is that the advance must not exceed one-half of the value of the property pledged or hypothecated, and that the repayment of the loan is by an annuity terminable at a certain date.

Credit Mobilier, the name given to a gigantic scheme promulgated in France in 1852, and sanctioned by the existing government, the objects of which are: To take in hand and originate trading enterprises of all kinds, on the principle of limited liability. To supersede or buy up trading companies; and to substitute script and shares of its own, for the shares and bonds of the company. The Credit Mobilier of America was a corporation with a Pennsylvania charter, granted in 1859 nominally to conduct a banking business. The charter passed into the hands of railroad financiers in 1864, who used it to finance the Union Pacific Railroad and to shield themselves from loss in case the railroad proved a failure. Congress investigated the enterprise in 1872-1873, and two members of the House of Representatives, Oakes Ames, of Massachusetts, and James Brooks, of New York, were censured by resolution of the House.

Creed, a summary of belief, from the Latin credo (I believe), with which the Apostles' Creed begins.

Creedmoor, a rifle range belonging to the State of New York, located at Queen's station on the Long Island railway, some miles E. of the city of New York. The range extends over 85 acres, has 30 targets, and can be used at any distance from 50 to 1,200 yards.

Creeks, an Indian tribe occupying a reservation of 4,750 square miles, in the N. E. portion of Indian Territory. The reservation is rich in natural resources, and the Creeks are in an advanced state of material prosperity. Their chief and Legislature are chosen by popular vote. There are good railroads and excellent educational institutions. The Creeks numbered (1899) 14,771, but the total population of the reservation (1900) was over 18,000. The capital is Okmulgee. The tribe's trust funds aggregate $2,000,000. They are classed as one of the Five Civilized Tribes. Most of them profess evangelical Christianity.

Creepers, a family of birds which strongly resemble the woodpeckers in their habit of creeping on the stems of trees with the aid of the strong quills which project from the tail-feathers, and of securing their insect food by an exsertile tongue.

Creepers, a popular name for those plants which, having weak stems, seek support from other objects, chiefly from other plants, in order to ascend from the ground.

Cremation, the act of cremating or disposing of a corpse by burning instead of burying it. Cremation was practised among the Greeks and Romans. The first crematory in the United States was established in Washington, Pa., in 1876. It was first used for the incineration of the body of the Baron de Palm in December of that year. Other crematories have since been established at various points.

Cremieux, Isaac Adolphe, a French jurist and politician; born in Nimes, April 30, 1796; became an advocate in Paris, entered the Chamber, and in 1848 was a member of the provisional government. Imprisoned at the coup d'etat, he subsequently confined himself to professional work till 1870, when he was a member of the government of national defense. He died Feb. 10, 1880. He was the founder of the Alliance Israelite Universelle.

COMMON CREEPER.

Cremona, a decayed city of Northern Italy, on the N. bank of the Po, 60 miles S. E. of Milan. In the 16th, 17th, and 18th centuries it was greatly celebrated for its manufacture of violins, the most famous makers being the Amatis, the Guarneris, and Stradivari. Pop. (1900) 37,661. Cremona is the capital of a province of the same name; area, 695 square miles. Pop. (Feb. 9, 1901) 327,802.

Creole, a person, in either America or the West India Islands, of European progenitors; as, a Spanish creole. It is sometimes, also, applied, but wrongly, to any person born within tropical latitudes, of whatsoever color.

Creole State, Louisiana, where the direct descendants of the original French and Spanish colonists form an important element in the social fabric.

Crescendo, increasing; a gradual increase in the force of sound.

Crerar, John, an American philanthropist; born in New York city, about 1828. He entered mercantile life and accumulated a fortune, removing to Chicago in 1862, and adding to his wealth by railway financiering. He readily bestowed large sums upon charitable undertakings, and in his will left $2,500,000 to found the John Crerar Public Library, from which sensational novels and skeptical works should be excluded. Died in Chicago, Oct. 19, 1889.

Crescent, anything shaped like the moon in her state of increase; the figure of a new moon borne on the national standard of Turkey; and hence figuratively used for the Turkish power or Mohammedanism itself.

Crescent City, a name by which New Orleans is widely known. The older portion is built around a semicircular bend of the Mississippi, but in its recent growth the city has spread around another bend further up stream, and is now nearly S-shaped.

Crespo, Antonio Candido Goncalves, a Portuguese poet; born in Rio Janeiro, March 11, 1846. He graduated in jurisprudence at the Coimbra University, but devoted himself almost exclusively to the Muses at Lisbon. He published only two small volumes. In collaboration with his wife, Maria Amália Vaz de Carvalho, herself a notable writer, he was author of "Stories for our Children." He died in Lisbon, June 11, 1883.

Crespo, Joaquin, a Venezuelan military officer; born in Venezuela about 1840. He received a liberal education, became governor of the State of Guarico in 1880, and was President of Venezuela in 1884–1886. In 1892 he headed a revolution, making himself dictator. Two years later he was again elected president, serving until 1898. He was killed in battle with insurgents April 16, 1898.

Cress, the name of several species of plants. Water-cress is used as a salad. It grows on the brinks of rivulets and in moist grounds.

Crest, a portion of the armorial bearings of a nobleman or gentleman entitled to bear coat-armor that is commonly used without the shield, being painted on the doors of carriages, and engraved on plate and signet rings.

Creswick, Thomas, an English landscape-painter; born in Sheffield, Feb. 5, 1811; died Dec. 28, 1869.

Cretaceous System, in geology the highest division of the secondary strata, occurring in North America in the Western States and Territories, and including the bones of huge dinosaurs and other reptiles.

Cretinism, a kind of idiocy prevalent in various Alpine valleys. In most, if not in all cases, the afflicted person has an ugly swelling on his neck. This varies in size from a walnut to a quartern loaf. The existence of such a protuberance does not, however, necessarily imply idiocy.

Creusot, Le, a town in the French department of Saone-et-Loire, 236 miles S. S. E. of Paris. Situated in the midst of a district rich in coal and iron, it owes its importance to the establishment here in 1837 of the great ironworks of Schneider and Co., which ranks among the largest in the world.

Cribbage, a game usually played by two persons with a complete pack of 52 playing-cards. Three or four can also play.

Crichton, James, surnamed THE ADMIRABLE; born in Scotland, in 1560. He was educated at the university of St. Andrew's. He went to France, where he continued his studies, and took part in the war carried on by Henry III. against the Huguenots. About 1580 he went to Italy, visiting Genoa, Rome, and Venice, where he was warmly received by the great printer Aldus. He was introduced to the Doge and Senate, and created astonishment at Venice and Padua, by his brilliant off-hand discourses and his challenge to disputation in any of several languages, and on either side of any controversy. He next went to Mantua, and was appointed tutor to the son of a duke. Attacked in the streets one night by a party of men armed and masked, he overcame them by his superior skill, and recognized his pupil, to whom he at once presented his sword. The young prince immediately ran him through with it, July 3, 1582.

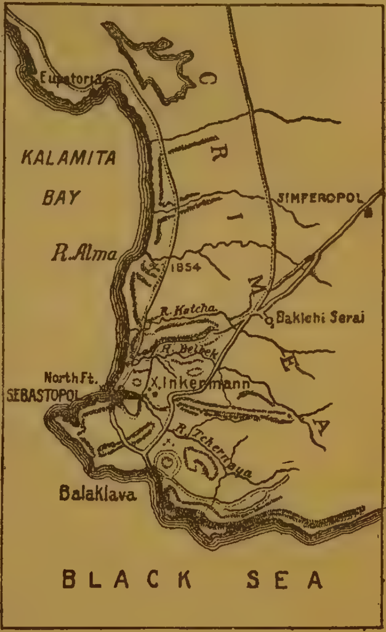
Cricket, the name given to certain insects. The best known species are the following: The common cricket or house cricket found around the kitchen hearth. The field cricket is found in burrows among stones and sand. The mole cricket has curious mole-like hands or hand-like organs, admirably adapted for digging.

Cricket, a game, played in the United States, Great Britain, Australia, and India, the players being arranged in two contesting parties of 11 each — England's national game.

Crime, an act which violates a law or rule, divine or human, and subjects to judgment and condemnation; a breach of the laws prescribed by God or man. A capital crime is any crime which incurs the penalty of death.

Crimea, The, a peninsula of Southern Russia, government of Taurida, to the mainland of which it is attached by the Isthmus of Perekop; area, 10,000 square miles. Pop. estimated at 450,000. The chief town and port is Sebastopol. The country was anciently associated with the Cimmerians, and in later times with various Greek settlements and minor kingdoms. After being for some time a dependency on Rome, it was overrun by successive bodies of barbarians, and in 1237 fell into the hands of the Mongols under Genghis Khan. In 1783 the Russians took possession of the country; and with the view of overawing the Turks the great naval arsenal of Sebastopol, occupying the most commanding position in the Black Sea, was begun by Catharine II. in 1786. Its military resources were steadily developed up to the time of the Anglo-French campaign of 1854, when it fell into the hands of the allies. It has again become a powerful stronghold.

Crimean War, the struggle between England, France, Sardinia and Turkey, against Russia to prevent the preponderance of the latter in the E. of Europe, which occurred in 1854 to 1856. The war was attended by hard fought battles and much disease and suffering in the camps. Russia held out stubbornly, but was compelled to accept the terms of the allies, and give up her projects against Turkey. A treaty was accordingly concluded at Paris on April 27, 1856, by which the independence of the Ottoman Empire was guaranteed.



SCENE OF THE CRIMEAN WAR.

Criminal Law. The bodies of laws, statutory and common, relating to crime and its penalties.

Criminology, a term denoting a new science, the branch of anthropology which deals with crime and criminals.

Crinoidea, an order of radiate animals, mostly fossils. The joints are extremely numerous, and the subdivision of the rays often very great. The disk is composed of calcareous pieces and fleshy integuments like the rays, as is also a stalk on which the whole is usually supported; the base, it is supposed, being fixed, and the disk and rays expanding like a flower.

Crinoline, originally, a horse-hair and cotton fabric for setting out a lady's skirts. The modern crinoline, by that specific name, came into fashion in the United States, France and England in 1855.

Crinum, a genus of plants. The species are very beautiful ornaments of gardens. One of them is the poison bulb of the East Indies, which is a powerful emetic, and is used to produce vomiting after poison has been taken.

Cripple Creek, a town in El Paso co., Col.; 50 miles W. of Colorado Springs. It is the trade center for the Cripple Creek mining district, in which the output of gold in the first half of 1902 was $13,936,392, and the total production of the camp to Jan. 1, 1902, was $116,549,287. The town has several cyanide mills, smelters and other mining industries. It was founded in 1890, and was nearly destroyed by fire in 1896. Pop. (1900) 10,147.

Crishna, in Hindu mythology an incarnate deity of perfect beauty. King Canza being informed that a child of the family of Devaci would overturn his throne, gave orders to destroy all the male infants that were born. When Crishna was born, his nurse attempted to poison him, but failed, and the mother and child fled, and were taken care of by a shepherd. As he grew up, his beauty was so divine that all the princesses of Hindustan fell in love with him, and even now is the Apollo of India.

Crisis, in medicine, the turning point in a disease at which a decided change for the better or the worse takes place. The word crisis is also used for a decisive point in any important affair or business, for instance, in politics and commerce.

Crisp, Charles Frederick, an American jurist; born in Sheffield, England, Jan. 24, 1845; removed to Americus, Ga.; served in the Confederate army; was admitted to the bar; he was Judge of the Supreme Court from 1877 to 1882. He resigned to accept a nomination for Congress, of which body he was chosen speaker. Died at Atlanta, Ga., Oct. 23, 1896.

Crispi, Francesco, an Italian statesman; born in Ribera, Sicily, Oct. 4, 1819. He studied law and settled at Naples. He took part in the conspiracies that led to the overthrow of the Two Sicilies, after which he fled to France; served as a major under Garibaldi, and in 1861 was returned by Palermo to the first Italian Parliament. Became President of the Chamber of Deputies; was made Minister of the Interior and later Prime Minister. He was a warm friend of Bismarck. He became unpopular and two attempts were made to assassinate him. He died Aug. 11, 1901.

Crispin, a Christian shoemaker, martyred under Diocletian; the patron saint of the shoemakers.

Crittenden, George Bibb, an American military officer; born in Russellville, Ky., March 20, 1812. Graduated at the United States Military Academy and served as an officer in the Mexican War. He joined the Confederacy at the outbreak of the Civil War. He died in Danville, Ky., Nov. 27, 1880.

Crittenden, John Jordon, an American legislator; born in Woodford Co., Ky., Sept. 10, 1787. Graduated at William and Mary College, he became a member of the State Legislature, and was elected to the United States Senate. He resigned but subsequently was reëlected twice. In 1848 he became governor of Kentucky. Through his influence the State remained loyal to the Union in the Civil War. He died near Frankfort, Ky., July 26, 1863.

Crittenden, Thomas Leonidas, an American military officer; born in Russellville, Ky., May 15, 1819. He was educated for the law. He served as an officer in the Mexican and Civil Wars. He distinguished himself at Shiloh, Stone River, and Chickamauga. He was placed on the retired list in 1881. He died in Annandale, N. Y., Oct. 23, 1893.

Crittenden, Thomas Theodore, an American lawyer; born in Shelby Co., Ky., Jan. 2, 1832; graduated at Centre College, Danville, Ky., in 1855; served through the Civil War; practised law after the close of the war; filled an unexpired term as attorney-general of Missouri; was a member of Congress; governor of Missouri; United States consul-general at the City of Mexico, and later resumed the practice of law.

Crittenden Compromise, a policy advocated by John J. Crittenden, according to which the old boundary line between slave territory and free territory in the United States (36° 30′ N.) should be reëstablished, and fugitive slaves returned to their owners.

Croatia, a country which forms, along with Slavonia and the Military Frontiers, a province or administrative division in the S. W. of the Austrian dominions in the Hungarian portion of the monarchy, partly bounded by the Adriatic; total area, 16,411 square miles. The inhabitants are Croats and Serbs, with a mixture of Germans, Hungarians, Jews, and Gypsies. About three-fourths of the population are Catholics, the rest belong chiefly to the Greek Church. The chief towns are Agram, Warasdin, and Karlstadt. Pop. 1,905,295. In A. D. 640 the Croats, a tribe from the Carpathians, settled in Croatia, and gave their name to the country.

Crocker, Charles, an American capitalist; born in Troy, N. Y., Sept. 16, 1822. He went to California in 1849, and in 1860 was elected to the State Legislature. With Leland Stanford, Mark Hopkins, and Collis P. Huntington, he projected and completed the Union Pacific Railway system, making a large fortune. He died in Monterey, Cal., Aug. 14, 1888.

Crocker, Francis Bacon, an American electrician; born in New York July 4, 1861; graduated at Columbia University in 1882; became vice-president of the Crocker-Wheeler Electric Company and Professor of Electrical Engineering in Columbia University.

Crockett, David, an American pioneer, hunter, politician, and humorist; born in Limestone, Tenn., Aug. 17, 1786. He was member of Congress from Tennessee; served in the Texan War; and was one of the eccentric characters of the Southwest, about whom numerous stories are still told — notably of the coon which voluntarily agreed to "come down." He was killed at Fort Alamo, San Antonio, Texas, March 16, 1836.

Crockett, Samuel Rutherford, a Scotch novelist; born in Little Duchrae, Galloway, in 1862. He was a tutor and university pupil-teacher at an early age; but a volume of verse, "Dulce Cor," and "The Stickit Minister," a volume of prose stories, showed literature to be his vocation.

Crocodile, the name of lizard-like reptiles, species of which are found in the Old and New Worlds. The crocodile inhabiting the Nile and other rivers of Africa has been known for many ages. It is not surprising that the Egyptians should place among their gods animals so powerful and destructive, though a better reason is to be found in the defense which they afforded against the incursions of robbers, who were not fond of crossing rivers frequented by crocodiles. A regular priesthood and worship were consecrated to this ferocious deity, and in the temple of Memphis a sacred individual of the species was reared with great care. When he died the priests embalmed his body, and buried it in the royal sepulcher. Formerly this reptile was found near the mouth of the Nile, but is now seldom found further N. than the first cataract in Upper Egypt.

The American species are more commonly known as alligators, and are found in the Mississippi near its mouth and other of the southern States. True crocodiles (often called alligators) are found in the West Indies, Central and South America. The Jamaica species is often seen some distance out at sea.

These reptiles are truly formidable, from their great size and strength, and if they were not rendered unwieldy by the length of the body and tail might become as dreadful on land as in the water, where they can act to the greatest advantage. Where they abound it is extremely dangerous to venture into the rivers for the purpose of bathing, or to be carelessly exposed in a small boat. On shore their shortness of limb, great length of body, and difficulty of turning or of advancing otherwise than directly forward, enable men and animals readily to escape pursuit. These animals are exclusively carnivorous, feeding on such animals as frequent the waters, and on fish or carcasses thrown into the streams they inhabit. They always prefer their food in a certain state of putrefaction, and are known to keep animals killed by themselves in the mud until this process has begun.

Crocus, a genus of flowering plants, some of which blossom in early spring, while others are in flower in autumn.

Croes, John, an American clergyman; born in Elizabethtown, N. J., July 1, 1762; served in the army throughout the Revolutionary War; ordained in the Protestant Episcopal Church, and conducted a classical school for a number of years; elected Bishop of Connecticut in June, 1815, and of New Jersey in August of the same year. He died in New Brunswick, N. Y., July 30, 1830.

Crœsus, the fifth and last King of Lydia. He succeeded his father Alyattes, 560 B. C. His riches were greater than those of any king before him, so that his wealth became proverbial. The legend says that he asked the philosopher Solon what he thought of his good fortune: "I pronounce no man fortunate until his death," was the reply. Subsequently Crœsus was made prisoner by Cyrus, King of Persia. When bound to the stake and about to be burned to death, he recalled the words of Solon, and thrice repeated his name. Cyrus demanded an explanation. Crœsus gave it, and Cyrus not only spared his life, but also took him into his favor and protection. At the death of Cyrus he recommended Crœsus to the favor of Cambyses, who ordered him to be put to death.

Croffut, William Augustus, an American prose writer and poet; born in Redding, Conn., Jan. 29, 1835. He is a journalist of wide experience, having been connected with various newspapers. He has long been connected with the United States Geological Survey.

Crofters, petty farmers in Scotland renting a few acres of land, with sometimes the right of grazing their cattle in common on a piece of rough pasture.

Croghan, George, an American military officer; born near Louisville, Ky., Nov. 15, 1791; graduated at William and Mary College; greatly distinguished himself at the defense of Fort Meigs and Fort Stephenson in 1813, receiving a gold medal from Congress. He died in New Orleans Jan. 8, 1849.

Croker, Richard, an American politician; born in Black Rock, Ireland, Nov. 24, 1843; came to the United States in early life. He was Alderman of New York three times, and in 1889–1890 was City Chamberlain. He was for several years at the head of Tammany Hall; and was long the Democratic dictator of New York State and city, and conspicuous in the National affairs of his party. He has a residence at Wantage in England, having retired from activity in American politics.

Croly, David Goodman, an American journalist; born in New York city Nov. 3, 1829; was educated at the University of New York; was reporter and editor on various New York papers. He foretold the financial panic of 1873, naming the firm of Jay Cooke & Company as the first to fail. He died in New York city April 29, 1889.

Croly, Jane (Cunningham), widely known by her pen-name of "Jennie June," an American writer, wife of D. G. Croly; born in Market Harborough, England, Dec. 19, 1831; settled in New York city in 1841; for many years she was editor of "Demorest's Magazine," and other periodicals. She was one of the founders of "Sorosis" and its president for 14 years. She died in New York city, Dec. 23, 1901.

Cromlech, an erection consisting of two or more stones standing like pillars, with a large flat, or rather a slightly inclined one, placed upon the top, so as to make the whole present a rude resemblance to a table, found throughout the Celtic area. Formerly they were generally held to be old altars for sacrifices, but are now believed to be sepulchers. Similar erections are seen in various parts of North and South America, Europe, Arabia and India, other races than the Celtic having adopted the same idea.

Crompton, Samuel, an English inventor; born near Bolton in 1753. He early displayed a turn for mechanics, and when only 21 years of age invented his machine for spinning cotton, which was called a mule. The mule shared in the odium excited among the Lancashire hand-weavers against machines, and for a time Crompton was obliged to conceal his invention. He afterwards brought it again into work; but was unable to prevent others from profiting by it at his expense. Various improvements were introduced from time to time. The sum of $25,000 voted to him by Parliament in 1812, was almost all the remuneration which he received. He died in 1827.

Cromwell, Oliver, Lord-Protector of the commonwealth of England, Scotland, and Ireland; born in Huntingdon, England, April 25, 1599. His father was Robert Cromwell, a gentleman who represented the borough of Huntingdom in the Parliament of 1593. Robert Cromwell was a younger son of Sir Henry Cromwell, who was knighted by Queen Elizabeth; and Sir Henry again was a son of Sir Richard Williams, a nephew of Thomas Cromwell, Earl of Essex, whose name he took. Oliver's mother was a daughter of William Steward, of Ely, and could trace her descent back to Alexander, lord-steward of Scotland, the founder of the house of Stuart. Cromwell's religious earnestness, his courage in the field, and his ability as a general made him the leader in the great revolution which for a time overthrew monarchy in England and Scotland. As head of the State under the title of "Lord-Protector" he made the name of England respected and feared abroad. His life was the history of England from the date, at least, of his decisive victory over Charles I. at Naseby until his death. He was to some extent the creature of circumstances and probably thought at one time of restoring the king, instead of taking his life. He wisely concluded, however, that, the restoration of Charles would be his own destruction, and he then deliberately brought about the trial and execution of his sovereign. His character embraced dissimilation strangely combined with sincere fanaticism. As a general he was merciless, but tolerant in matters of conscience. He failed to found a dynasty because another like himself would have been needed to maintain it. By his complete subjection of Scotland he paved the way for the union of the two kingdoms, and he was the first to make Britain imperial by the naval victories of his admirals, and the promotion of commerce with the colonies. He died at Whitehall, Sept. 3, 1658.

Cromwell, Richard, third son of Oliver; born Oct. 4, 1626. By the death of his two elder brothers he became his father's heir. He was an amiable and popular but weak man, devoted to field sports and fond of pleasure. He lived for some time in comparative privacy, but when the Protector had been empowered to nominate his successor, Richard was brought to the front, and an effort was made to train him to the work of government, but in vain. Scarcely had he entered on his office, when the forces of anarchy, both parliamentary and military, broke loose, and he found himself utterably unable to restrain them. After the Restoration he lived for a time abroad under a feigned name; but he returned to England about 1680, and passed the remainder of his life at Cheshunt, where he died July 12, 1712, and was buried at Hursley, Hampshire.

Cromwell, Thomas, Earl of Essex, chief minister to Henry VIII.; born about 1485 at Putney, in Surrey, where his father carried on the occupations of blacksmith, clothfuller, brewer, and innkeeper. He rose to prominence through the favor of Cardinal Wolsey and after Wolsey's death became King Henry's chief adviser, was made lord high chamberlain, and Earl of Essex, and was enriched with the property of confiscated monasteries. He lost favor with the king, was tried for treason, and executed July 28, 1540.

Cronje, Piet, a Boer military commander; born near Pretoria in 1835. He has been prominent in all the history of the South African Republic. Bred to farm life, he entered politics, refused office under British annexation, commanded a brigade in the war of 1880–1881, became a member of the Transvaal executive government, and captured Sir John Willoughby and his force after the Jameson raid of 1896. During the war with England in 1899–1900, Cronje rose to the military leadership of the Boers, and held out heroically with an inferior force till forced to surrender to Lord Roberts at Klip River, near Paardeberg, Orange Free State. He was exiled to St. Helena in May, 1900, being released at the end of the war.

Cronstadt, a maritime fortress of Russia, about 20 miles W. of St. Petersburg, in the narrowest part of the gulf of Finland, opposite to the mouth of the Neva, on a long, narrow, rocky island, forming, both by its position and the strength of its fortifications, the bulwark of the capital, and being the most important naval station of the empire. It was founded by Peter the Great in 1710, and used to be the commercial port of St. Petersburg, but since the construction of a canal giving large vessels direct access to the capital it has lost this position.

Crook, George, an American military officer; born near Dayton, O., Sept. 8, 1828. He was graduated at the United States Military Academy in 1852, and rose to the rank of Major-General. In the Civil War he greatly distinguished himself, and after the war achieved celebrity in campaigns against the Indians. From 1888 until his death, he commanded the Military Division of the Missouri. He died in Chicago, March 1, 1890.

Crookes, Sir William, an English physicist and chemist; born in London in 1832. He invented the radiometer and the otheoscope, and announced his discovery of the fourth or ultra-gaseous state of matter. He is recognized as an expert on sanitary matters.

Cropsey, Jasper Francis, an American artist, born in Rossville, N. Y., Feb. 18, 1823. His paintings include "Autumn on the Hudson," "Anne Hathaway's Cottage" and "Richmond Hill — Midsummer." He died in Hastings-on-Hudson, N. Y., June 22, 1900.

Croquet, to the most scientific form of which the name Roque is given, is an open-air game played with balls, mallets, and arches. It is substantially a revival of the old game of Pall Mall, which gave its name to the well known London street.

Crosby, Howard, an American clergyman and scholar; born in New York city Feb. 27, 1826; graduated at the University of the City of New York and later became Professor of Greek there. In 1863 he was made pastor of the Fourth Avenue Presbyterian Church in New York city, and thereafter was frequently a delegate to the Presbyterian General Assembly and was once its Moderator. He was in 1873 a delegate to the first Presbyterian General Council, held in Edinburgh. Dr. Crosby was one of the founders and president of the Society for the Prevention of Crime. He died in New York, March 29, 1891.

Crosby, John Schuyler, an American military officer; born in Albany, N. Y., Sept. 19, 1839. He was educated in New York city, and entered the army at the outbreak of the Civil War, serving with distinction. Became consul at Florence in 1876, governor of Montana in 1882, and first assistant postmaster-general in 1884, resigning in 1886.

Crosier, the pastoral staff of an archbishop, surmounted by a cross; or of a bishop or abbot, terminating in a curve or crook.

Cross, a gibbet, consisting of two pieces of timber placed across each other in a variety of forms. The cross was used as a very general instrument of punishment from the earliest times, but in no part of the ancient world was this punishment so generally resorted to as in the Roman empire, where it was regarded as the most infamous of deaths.

By the death of Christ, the cross, from being an object of horror, became the symbol of the Christian world, and, from respect for this symbol, Constantine abolished the punishment of crucifixion throughout the Roman dominions.

Cross-bill, a species of birds of the finch family, deriving their name from the construction of their bill, the mandibles being curved so as to cross each other. Found in the Northern States, Canada, Europe, and Japan.

Crossbow, a weapon formed of a bow crosswise upon a stock. It was used by the Normans at the battle of Hastings.

Crossbuns, a small cake specially prepared for Good Friday, and in many towns cried about the streets on the morning of that day as "hot cross buns." Good Friday buns were appropriately marked with the cross, and hence the name. The origin of the practice is obscure.

Crotalidæ, a family of serpents. There is a deep pit on each side of the nose lined with small plates. The crown of the head is scaly, the belly covered with shield-like plates. The poison fangs are very large; the other teeth are small. The rattlesnake of the United States is the most formidable of the family.

Croton, a river in New York which joins the Hudson 32 miles N. of New York city. It supplies the city with water through the Croton Aqueduct.

Croton Aqueduct, the aqueduct which carries the water supply of New York city from the Croton basin. The old aqueduct was constructed between 1837 and 1842; and is 38 miles long. New York needs demanding a greater supply, a new aqueduct was begun in 1883, known as "the new Croton Aqueduct," which is about 30 miles long, and delivers to the city 350,000,000 gallons a day. At Jerome Park the aqueduct makes a somewhat abrupt fall of about 100 feet, passing under the Harlem river some 300 feet below the level of the water, running under Manhattan Island, and finally rising at 135th street, where a gate-house is constructed from which the water is distributed by means of iron pipes, into the reservoir at Central Park and the city. It was opened in 1890. High Bridge carries the pipes of the water of the first or "old" aqueduct across the Harlem river. The bridge is 1,460 feet long and 116 feet above the high-water level.

Croton Oil, a powerful, irritant, drastic, purgative, often causing nausea and vomiting. In overdoses it is a dangerous poison.

Crotophaga, a genus of birds, found in South America. It is the ani or anno of the Latin races, the razor-billed blackbird of Jamaica, called also the savannah bird and the great blackbird. It feeds on small lizards, insects, and seeds. It lives in flocks, and when one individual is slain the rest gather again almost at the same spot. Several females are said to use the same nest.

Croup, a term used from an early period to describe a certain train of laryngeal symptoms, was first applied in 1765 to an acute inflammatory and non-contagious affection of the larynx, in which there is the formation of a false membrane or fibranous deposit on the mucous surface of the windpipe. Croup seems to be caused by a damp atmosphere of low temperature. It is most frequently met with between the years of two and ten, though all ages are liable to suffer from it. It is commoner in boys than girls.

Crow, the crow family. They are very omnivorous, and remarkable for their intelligence. The family, widely diffused over the world, includes the common crow, and the Raven, the Fish-Crow, the Rook, the Jay, and the Magpie. The common crow of North America is remarkable for its gregarious and predatory habits. They pair in March; the old repair their nests, the young frame new ones; but they are such thieves, that while the one is fetching materials, the other must keep watch to prevent the rising fabric from being plundered by their neighbors. As soon as the nest is finished and the eggs produced (five, bluish-green, with dark blotches), the male takes upon himself the care of providing for his mate, which he continues during the whole period of incubation. They frequent the same rookeries for years, but allow no intruders into their community. They feed chiefly on worms and the larvæ of insects; they also eat grain and seeds, whence they have sometimes been supposed injurious to the farmer; but they amply repay him for what they take by destroying the vermin in his fields.

Crow-blackbird, the name of certain American birds found in the Southern States, Mexico, and the West Indies, is 16 inches long, and of a glossy black plumage. The purple grackle, or common crow-blackbird, is similar to the preceding but smaller. They reach the Middle States of the

United States from the S. in flocks in the latter part of March, and build in April in the tall pines or cedars. On their first arrival they feed upon insects, but afterward commit great ravages upon the young corn. In November they fly S. again.

Crowe, Catherine, born in Kent, England, about 1800; died in 1876; author of the well-known book, dealing with the supernatural, "The Night Side of Nature."

Crowe, Sir Joseph Archer, an English historian of art and miscellaneous writer; born in London, Oct. 20, 1825. His celebrity rests mainly on the "History of Painting in Italy." He died in Bavaria, Sept. 7, 1896.

Crowfoot, a troublesome weed found in gardens and pastures. Many varieties, such as the spearwort, abound in moist places, bearing white flowers and spreading over ditches and ponds. The weed is acrid and when eaten by cattle imparts a strong flavor to dairy products.

Crown, a wreath or garland for the head, given as the reward of victory or of some noble deed.

The word is also applied to the ornament of the head worn as a badge of sovereignty by emperors, kings, and princes. That worn by the Pope is more commonly called a tiara.

Crowninshield, Arrant Schuyler, an American naval officer; born in New York State in 1843; graduated at the United States Naval Academy and participated in both attacks on Fort Fisher in the Civil War. Later he rose through the grades to the rank of captain. During the war with Spain in 1898 he was a member of the Board of Strategy. In 1900 he was chief of the Bureau of Navigation and in 1902 became commander of the European Squadron.

Crowther, Samuel Adjai, the first negro bishop of the Church of England; was born in Yoruba. He was carried into slavery in 1821, but was freed, with a large company of his countrymen, by a British man-of-war in 1822, and landed at Sierra-Leone, where he had the advantages of a school and soon became an excellent scholar. He finished his education in England, and accompanied the first and second Niger expeditions. In 1864 he was ordained "Bishop of the Niger," and filled that place with honor.

Croydon, a borough of England, in County Surrey, ten miles south of London. It is a place of ancient origin. Of special interest are the remains of the ancient palace, long a residence of the archbishops of Canterbury. Pop. (1901) 133,885.

Crozier, William, an American military officer; born in Carrollton, O., Feb. 19, 1855; graduated at the United States Military Academy in 1876; served for three years in the West, was Instructor of Mathematics at the Military Academy in 1879–1884, when he entered the Ordnance Department; and was commissioned captain in 1890. He invented a wire wrapped rifle and a ten-inch gun, and with General Buffington, the disappearing gun carriage. He took part in the American-Spanish War; and was appointed Chief of Ordnance with the rank of Brigadier-General in November, 1901.

Crucible, a melting-pot of earthenware, porcelain, refractory metal, or plumbago, adapted to withstand high temperatures.

Crucifix, a cross with the effigy of Christ fixed to it. The crucifix first began to take the place of the plain cross in the time of Constantine, but was never publicly acknowledged by the Greek Church. It was not till the Carlovingian age that it became general in the Latin Church. On the earlier crucifixes, Christ is represented as alive, with open eyes, and generally clad, and fastened with four nails. On later ones he is represented as dead, naked, except for a cloth round the loins, and fastened with three nails, the two feet pierced by a single nail.

Cruden, Alexander, a Scotch writer; born in Aberdeen, May 31, 1701. His "Concordance to the Old and New Testaments" is the familiar authority on the subject. He died in London, Nov. 1, 1770.

Cruger, Mrs. Julia Grinnell (Storrow), pen name "Julien Gordon," American novelist; born in Paris, France. Her home is in New York. She has written several popular novels.

Cruikshank, George, an English pictorial satirist; born in London, Sept. 27, 1792. His illustrations for Hone's political squibs and pamphlets and especially those dealing with the Queen Caroline trial, attracted much attention. He illustrated a number of Dickens' works. In his late years he devoted himself to oil-painting. He died Feb. 1, 1878.

Cruiser, one who cruises about; specifically, an armed vessel which cruises about, either to protect the commerce of its own country or to inflict damage on that of another. The cruiser rates just below the battleship and just above the gunboat. An armored cruiser has side or vertical armor and horizontal or deck armor. A protected cruiser has horizontal or deck armor only. An unprotected cruiser has no armor. One of the finest and swiftest cruisers afloat is the United States "Columbia." Her sister cruiser is the "Minneapolis." During the war with Spain in 1898 both of these vessels were assigned to patrol duty on the Atlantic coast, from Maine to Florida.

Crusades, the wars which were carried on by the Christian nations of the West, from the end of the 11th till the latter half of the 13th century for the conquest of Palestine. They were called Crusades because all the warriors who followed the holy banner wore the sign of the cross.

Crustacea, a sub-kingdom of the great group of articulate or annulose animals, and agrees with the Insects, Arachnids and Myriapods in having the body divided into transverse rings or somites, all of which may and some do possess each a pair of appendages or limbs made up of several pieces jointed or articulated to each other. This character of the limbs separates the group from the annulate animals (earth-worms, sand-worms, tube-worms, leeches), the limbs of which consist only, when present, of projections of the integument supporting movable bristles. The Crustacea are mostly aquatic, and all, even the terrestrial forms, breathe through the integument, or through the projections of the integument which are known as branchiæ or gills. Locomotion is by the limbs in walking or swimming, or by the limbs together with the flapping of the posterior part of the body, as in the lobster.

Cruz y Goyeneche, Luis de la, a Chilian military officer; born in Concepcion, Aug. 25, 1768. He bore a leading part in the revolution against Spain, commanding a regiment and falling into the hands of the enemy, but was liberated in 1817. He next became a political leader of the young republic, serving for a time as acting President of Chile. He died near Valparaiso, Oct. 14, 1828.

Cryolite, a mineral composed of aluminum, sodium and fluorine. It is found in large quantities in Greenland. The name signifies ice or frost stone. It also occurs in the Ural Mountains, but not abundantly.

Crypt, originally a subterranean cell or cave, especially one constructed for sepulture. From the usage of these by the early Christians crypt came to signify a church underground or the lower story of a cathedral or church. It is usually set apart for monumental purposes, but is sometimes used as a chapel.

Cryptography, the art of writing in secret characters or cipher, or with sympathetic ink. The simplest method consists in choosing for every letter of the alphabet some sign or another letter or group of letters.

Crypton, or **Krypton,** a new element discovered as existing in the atmosphere, less easily reduced to a liquid form than nitrogen, oxygen, or argon.

Cryptoprocta, a fierce carnivorous animal of Madagascar. It is plantigrade, resembles a weasel, three feet long, and attacks the largest animals with great ferocity.

Crystal, in chemistry and mineralogy, a clear transparent body, which, by the attraction of its particles, has assumed the form of one of the regular geometric solids, being bounded by a number of plane surfaces. Crystals occur with an almost infinite variety of forms — calcareous spar having alone more than 200 forms in more than a thousand different combinations, and some crystals have as many as 300 different sides. But all crystals may be grouped in accordance with certain systems.

Crystalline Rocks, a name given to all rocks having a crystalline structure.

Crystallography, the science which describes or delineates the form of crystals.

Crystalloid, a name given to a class of substances which when in solution pass easily through membranes; as opposed to colloids. Sugar, oxalic acid, etc., are crystalloids.

Crystallomancy, a mode of divining by means of a transparent body, as a precious stone, crystal globe, etc. The operator first muttered over it certain formulas of prayer, and then gave the crystal into the hands of a young man or virgin, who received an answer from the spirits within the crystal.

Crystal Palace, a well-known building at Sydenham, England, for public instruction and entertainment. The name was also given to a large building erected in New York city in 1853 for exhibition purposes, which after a successful career of five years was burned in 1858.

Csoma de Koros, Alexander, a Transylvanian traveler and philologist; born about 1790. He was in early life seized by the desire to investigate the origin of the Magyar race, and after a course of study at Gottingen, he went, in 1820, to the East. He spent several years in a Buddhist monastery in Tibet, diligently studying the Tibetan language and literature; imagining he recognized resemblances between the Tibetan and Magyar. He next lived some years in Calcutta, where he compiled his "Dictionary of Tibetan and English." He died in Darjeeling, as he was setting out on another journey into Tibet, in 1842.

Ctenoid, applied to the scales of fishes when jagged or pectinated on the edge like the teeth of a comb, as in the perch, flounder, and turbot.

Ctesiphon, a city of Babylonia, on the E. bank of the Tigris and opposite Seleucia, the common winter residence of the Parthian kings, and finally the capital of the Parthian kingdom. It was conquered by the Romans in 115 A. D., and destroyed by the Arabs under Omar in 637. Its ruins still attest its former magnificence.

Cuba, the largest and most westerly of the West Indies. It stretches in the form of a narrow crescent, convex on the N. side, at the entrance of the Gulf of Mexico, which it divides into two channels, the N. W., 124 miles wide, and the S. W., 97½ miles at its narrowest part.

Cuba is 775 miles long from Cape Maysi on the E. to Cape Antonio on the W., with a breadth varying from 30 miles to 160 miles, a coast-line of 1,976 miles, and an area of about 45,872 square miles, including adjacent islands (of which the Isle of Pines is the largest) and bays. Only about one-third of the coastline is accessible to vessels, the remainder being beset by reefs and banks. The shores, low and flat, are liable to inundations, but there are numerous excellent havens. A watershed running lengthwise through the islands, rises into mountainous heights only in the S. E., where are the Sierra de Maestra, shooting up in the Pico de Tarquinto to 8,400 feet, and the Sierra del Cobre (copper). The mountains, composed of granite overlaid with calcareous rocks, and containing minerals, especially copper and iron, are clothed in almost perennial verdure, wooded to the summits. The limestone rocks abound in caverns, with magnificent stalactites. Mineral waters are plentiful. The rivers, running N. and S., are navigable for only a few miles by small boats, but are very serviceable for irrigation of the plantations, and supply excellent drinking water. The climate, more temperate than in the other West Indian islands, is salubrious in the elevated interior, but the coasts are the haunt of fever and ague. No month of the year is free from rain, the greatest rainfall being in May, June, and July. Earthquakes are frequent in the E. Hurricanes, less frequent than in Jamaica, sometimes cause widespread desolation.

The soil of Cuba is a marvel of richness, and a large part is still covered with virgin forest. The vegetation of Cuba also includes tamarinds, palms, ferns, lianas, etc. Among the cultivated products are sugar, tobacco, coffee, cacao, rice, maize, cotton, esculent roots and tropical fruits. Among the animals are a species of tailless rat peculiar to Cuba, a great abundance of birds. Of noxious animals and insects there are the crocodile, scorpion, and mosquitoes. The rivers and seas are well stocked with fish, the turtle abounding in the shallows and sandy places of the beach. The staple production of the island is sugar. In a single year Cuba has produced over 11,000,000 tons of this article for export.

Tobacco ranks next to sugar as a staple. Cuba produces the standard quality of cigar leaf, owing to the exquisite adaptation of the soil and climate to the development of the plant. The normal production is 6,000,000 pounds of leaf, and 130,000,000 cigars. The mineral wealth of Cuba is largely in the copper mines. There are almost inexhaustible deposits of this metal, part of which are found in the mountains near the E. end, known as the Sierra del Cobre, or Copper Mountains. Here a great part of the ore taken out yields 60 per cent. of pure metal. Cuba has asphalt deposits rivalling those of Trinidad for street paving. Iron ores abound. In the neighborhood of Santiago there are mountains of metal, and for a considerable period the Juragua and Daiquiri companies (American) shipped from 30,000 to 50,000 tons of the ore per month to the United States. Oranges of exquisite flavor grow spontaneously in all parts of the island, though no attention is paid to their culture or exportation. There are cocoanuts, six kinds of bananas, and such fruits as guavas, zapotes, anonas, guanabanas, and tamarinds. There are 32 species of the palm tree, the woods and the leaves of the majority of which could be transformed into a profitable article of commerce, but so far only two have been utilized, the "yarey" palm, whose leaves are used in the United States for the manufacture of hats and baskets, and the "palma real" (royal palm), from which durable boards are made, which last much longer than those of the yellow pine and are largely used in the construction of houses.

There are 10 railway companies in Cuba, which operate upward of 1,000 miles of main line, and there are also private branch lines to all the important sugar estates.

There are over 2,300 miles of telegraph line in operation, all the property of the government, which also owns the telephones, leasing both systems to private corporations.

The total population, by the special census of 1899, was 1,572,797, thus distributed: Havana (province), 424-804; Matanzas, 202,444; Pinar del Rio, 173,064; Puerto Principe, 88,234; Santa Clara, 356,536; and Santiago, 327,715. Of the total population 20,478 were Spanish, 1,298,367 Cubans, and the remainder either "undeclared" or of other citizenship. Illiterates numbered 172,627. There were 57,513 more males than females, and more than one-half of the total population were native whites. The colored population was less than a third of the whole. There were 34,834 Chinese.

Cuba, spoken of as the QUEEN OF THE ANTILLES, was discovered by Columbus in 1492, the discoverer calling it "the most beautiful land that eyes ever beheld." It was first settled by Spaniards at Baracoa in 1511. Havana, first settled in 1519, was reduced to ashes by the French in 1538, and again in 1554. For about one and a half centuries Cuba was in constant danger from French, Dutch, English, and West Indian filibusters. In 1762 the English, under Lord Albemarle, took Havana, which, however, was by the treaty of Paris next year restored to Spain. From 1789 to 1845 the island was a vast slave-trading center. Negro insurrections occurred in 1845 and 1848. In the latter year the United States offered $100,000,000 to Spain for the island. Rebellions against Spanish rule broke out in 1849 and in 1868. They were put down after long campaigns; but in 1895 another insurrection attained by 1898 formidable proportions. The United States battleship "Maine," while on a friendly visit, was blown up in Havana harbor, Feb. 15, 1898, and on April 19 the Congress of the United States adopted resolutions declaring Cuba independent. War with Spain began at once. Cervera's Spanish fleet was destroyed at Santiago de Cuba, July 3, and Santiago and its large army were surrendered on July 17. The leading military events of the war, so far as Cuba was concerned, were the fights at El Caney and San Juan, the battle at Santiago, and the struggle before Las Guasimas. Under the treaty of peace the island was evacuated Jan. 1, 1899, the United States then formally assuming the government till the Cubans had adopted a written constitution and installed a satisfactory native government.

A convention to frame a constitution met in Havana, Nov. 5, 1900; on Jan. 22, 1901, received from the central committee a draft of the proposed constitution; and on Feb. 22 following adopted a series of declarations concerning the future relations of Cuba with the United States. These declarations were not acceptable to the United States, and Congress on March 2 passed what was known as the Platt Amendment, in which relations that would be satisfactory were detailed. On June 12 the Cuban convention adopted the Platt Amendment in its entirety. General elections for president, senatorial electors, representatives, and provincial governors and counsellors were held Dec. 31, 1901, and a president, vice-president, and the senators were duly elected Feb. 24, 1902, Thomas Estrada Palma becoming the first president.

On May 20, 1902, when the republic of Cuba formally came into existence, the territory was turned over to President Palma by Governor-General Wood, the Cuban flag raised and saluted, and the American army withdrawn from the island. After a period of depression the island is now prosperous.

Cubeba, a genus of hypogynous exogens, found in Asia and Africa. The ripe fruits constitute the cubebs of the druggist.

Cubic Equations, equations in which the highest exponent of a given quantity in any term is 3.

Cubitt, Sir William, an English engineer; born in Dilham, Norfolk, in 1785. In 1823 he went to London, and was afterward engaged in most of the public undertakings of his day. The improvement of the Severn and the water-works for Berlin are among his works. He also invented the treadmill. He died Oct. 13, 1861.

Cucking-stool, a kind of chair formerly used as an instrument of punishment. Scolds, cheating bakers or brewers, and other petty offenders were placed in it, usually at their own doors, to be hooted at and pelted by the mob. It has been frequently confounded with the ducking-stool.

Cuckoo, a well-known bird. The common cuckoo arrives in Europe in April, from Northern Africa and Asia Minor, its note being welcomed as the harbinger of spring, and remains only till about the end of June. It builds no nest of its own, but deposits its egg in the nest of the hedge-sparrow, the water-wagtail, the yellow-hammer, or similar birds. When the egg is hatched the young cuckoo unceremoniously pushes out of the nest the actual offspring of the foster parent, to which she herself looks for nurture. No true cuckoos are found in America.

Cuckoo Flower, or **Lady's-smock,** a common and pretty meadow plant, found in swamps N. of New York; blossoms in April or May, presenting a very pleasing appearance.

Cuckoo-spit, a froth or spume found on plants, being a secretion formed by the larva of a small homopterous insect.

Cucumber, an article of food, having yellow flowers in the axils of the leaf stalks. The leaves are large, the stems weak and trailing. It is a native of the S. of Asia and of Egypt. From Europe the cucumber was brought to this country, where it forms an important product, both as a fresh food and for pickling purposes.

Cucuta, San Jose de, a town in the Colombian Department of Santander, on the Rio Zulia, 35 miles S. of Puerto Villamizar. It is the third commercial town of the republic, a center of coffee and cacao cultivation. It was destroyed by earthquake in 1875, but has been well rebuilt. ROSARIO DE CUCUTA, to the S. E., was the seat of the first Colombian congress in 1821. It has large plantations of coffee and cacao.

Cuddapah, or **Kadapa,** a district and town of Hindustan, presidency of Madras. The district, of which the area is 8,745 square miles, is traversed N. to S. by the Eastern Ghauts, and watered by the Pennar and its affluents. The forests contain much valuable timber, and the minerals include iron ore, lead, copper, diamonds, etc. Agriculture is in a flourishing condition, grain, cotton, and indigo being largely grown. Pop., 1,121,038.

Cudlip, Annie Thomas, an English novelist; born in Aldborough, Oct. 25, 1838. She married a clergyman, and in 1863 published "The Cross of Honor," a successful novel, since followed by numerous other popular works.

Cunenca, a city of Ecuador, on the Rio Paute, 190 miles S. S. W. of Quito; on a fertile tableland, 8,469 feet above the sea, and enjoys a perpetual spring, with a mean temperature of 58° F. Pop. (including Ejido, or Indian quarter), 30,000.

Cuernavaca, capital of the Mexican State Morelos, lies in a lovely and fruitful valley, about 40 miles S. of Mexico city. It has a church built by Cortes, an agricultural school, and refineries of sugar and brandy. Pop., 17,000. Near by is the famed teocalli of Xochicalco, with five terraces.

Cufic, pertaining to Cufa, a town founded by Omar I., in A. D. 637, the ruins of the Parthian capital Ctesiphon having been largely used for the purpose; also relating to inscriptions and coins bearing the kinji or Cufic writing, or old Arabic.

Cuirass, a breastplate; a covering for the breast; originally, as the name denotes, of leather, also of quilted linen, cloth, etc. It is now, in most European services, worn by some regiments of heavy cavalry.

Culdees, a religious order which at an early period had establishments in many parts of Great Britain and Ireland, but are especially spoken of in Scotland. The name is of uncertain etymology; but is probably from Celtic words meaning "attendant of God."

Cullen, Paul, an Irish churchman; born near Ballytore, in County Kildare, April 27, 1803. He was ordained priest, and filled in succession the offices of vice-rector and rector of the Irish College in Rome, and rector of the Propaganda College. During the period of Mazzini's power in Rome in 1848, Cullen saved the property of his college by placing it under American protection. At the close of 1849 he unexpectedly found himself nominated to the archbishopric of Armagh and primacy of Ireland. Translated to Dublin in 1852, he was created a cardinal priest in 1866, the first Irishman who had reached that rank. He died in Dublin Oct. 24, 1878.

Culloden Moor, a heath in Scotland, 4 miles E. of Inverness, celebrated for the victory obtained April 27, 1746, by the Duke of Cumberland over Prince Charles Edward Stuart (the Pretender) and his adherents. The battle was the termination of the attempts of the Stuart family to recover the throne of England.

Cullum, George Washington, an American military officer; b. in New York city, Feb. 25, 1809; graduated from West Point, and was engaged in instructing at West Point on practical military engineering. During the Civil War he was chief of staff to the general-in-chief from November, 1861, to September, 1864, and superintendent of the military academy from September, 1864, to August, 1866. From that time he was a member of the Board of Engineers for Fortifications, until he was placed on the retired list in 1874. He died in New York city, Feb. 28, 1892, bequeathing $250,000 for the erection of a Memorial Hall on the grounds of the military academy, and $40,000 for furnishing it with military busts, paintings and other appropriate objects.

Cumæ, a very ancient city of Italy, in Campania, the oldest colony of the Greeks in Italy, founded about 1030 B. C. by colonists from Chalcis, in Eubœa, and from Cyme in Asia Minor. It was destroyed A. D. 1207, and a few ruins only now exist.

Cumana, a town of the Venezuelan State of Bermudez, on the Manzanares, a mile above its mouth, where the port of Puerto Sucre lies on the Gulf of Cariaco. It is chiefly of interest as the oldest European town on the South American mainland, having been founded by Christopher Columbus' son Diego as New Toledo in 1521. It has suffered much from earthquakes.

Cumberland, a river of the United States which runs through Kentucky and Tennessee into the Ohio, having a course of about 600 miles, navigable for steamboats to Nashville, nearly 200 miles.

Cumberland, William Augustus, Duke of, second son of George II. of England; born in 1721. At the battle of Dettingen he was wounded when fighting at the side of his father, and though unsuccessful at Fontenoy, where he had the command of the allied army, he rose in reputation by subduing the insurrection in Scotland caused by the landing of Charles Edward Stuart in 1745. In 1757 he lost the battle of Hastenbeck, against D'Estrees, and concluded the convention at Closterseven, by which 40,000 English soldiers were disarmed and disbanded, and Hanover placed at the mercy of the French. He then retired in disgrace from his public offices. He died in 1765.

Cumberland Gap, a passage through the Cumberland Mountains; on the line between Kentucky and Tennessee and at the W. extremity of Virginia. It is a place about which clusters many a Civil War incident. It was occupied by Zollicoffer in his retreat Nov. 13, 1861. On March 22, 1862, a reconnoissance in force was made from Cumberland Ford to this place. The Confederate pickets were driven in, and firing began early in the morning, which continued all day, without any definite results. The Gap was occupied by the Union forces under General Morgan, June 18. Skirmishing was of almost daily occurrence. General Morgan destroyed everything of value as war material, and evacuated the place Sept. 17, and, though surrounded by the enemy, he succeeded in saving his command, which reached Greenupsburg on Oct. 3. The Gap was occupied by General Bragg, Oct. 22. On Sept. 8, 1863, the place, with 2,000 men and 14 pieces of artillery, under the Confederate General Frazer, surrendered, without firing a gun, to General Shackelford. A three hours' skirmish occurred Jan. 29, 1864, on the Virginia road, 13 miles distant. Colonel Love, with 1,600 cavalry, 400 only of whom were mounted, with no artillery, held his position till dark and then fell back three miles to camp. On April 28, 1865, 900 Confederates surrendered, and were paroled here.

Cumberland Mountains, in Tennessee, part of a range of the Appalachian system, rarely exceeding 2,000 feet in height.

Cumberland Presbyterians, a religious denomination which sprang up in 1810 in the State of Kentucky, in consequence of a dispute between the presbytery of Cumberland in that State, and the Kentucky Synod of the Presbyterian Church in America, concerning the ordination of persons who had not passed through the usual educational curriculum, but whose services the presbytery regarded as demanded for the ministry by the exigencies of the times.

Cumberland, The, an American sloop-of-war, of 30 guns, sunk off Newport News, Hampton Roads, Va., by the Confederate iron-clad ram, "Merrimac," March 8, 1862, going down with all on board and her colors flying. Nearly all of the crew perished.

Cumberland University, a coeducational institution in Lebanon, Tenn.; organized in 1842, under the auspices of the Cumberland Presbyterian Church.

Cumbria, an ancient British principality, its capital being Alcluyd or Dumbarton. It was possibly at one time the chief seat of the power of Arthur, and in the 6th century was an important and powerful kingdom. It speedily, however, fell under Saxon domination, and early in the 11th century was given by Edmund of Wessex to Malcolm of Scotland to be held as a fief of the crown of England. The name still survives in Cumberland.

Cummin, or **Cumin,** a dwarf plant, resembling fennel, cultivated in the S. of Europe, Asia Minor, etc., for its seeds, which are hot and aromatic, and used like those of anise, caraway, etc.

Cumming, Constance Frederika Gordon, a Scotch traveler; born May 24, 1837, the sister of the lion-hunter. She traveled extensively, residing in Ceylon, and Fiji, and visiting Tahiti, China, Japan, California, Hawaii, New Zealand, and Australia. She has written various sprightly and entertaining volumes of travel.

Cumming, Roualeyn-George Gordon, the African lion-hunter and second son of Sir William-Gordon Gordon-Cumming; born in Altyre, Scotland, March 15, 1820. He became a cornet in the Madras Cavalry in 1838, served for a time in Canada, and joined the Cape Mounted Rifles in 1843; but soon resigned his commision, and engaged in famous hunting xploits. He died at Fort Augustus, larch 24, 1866.

Cummins, Maria Susanna, an merican novelist; born in Salem, lass., April 9, 1827; d. in Dorchester, lass., Oct. 1, 1866.

Cumulative Vote, the system by hich every voter is entitled to as any votes as there are persons to be lected, and may give them all to one andidate, or may distribute them mong the candidates, as he thinks fit.

Cunard, Sir Samuel, founder of n English steamship line; born in Ialifax, Nova Scotia, where his fath- r, a Philadelphia merchant, had set- led, Nov. 21, 1787. Becoming early successful merchant and shipowner, e went to England in 1838, joined ith George Burns, Glasgow, and Da- id M'Iver, Liverpool, in founding the ritish and North American Royal Iail Steam Packet Company, and ob- ained a contract from the British overnment for the mail service be- ween Liverpool and Halifax, Boston, nd Quebec. The first passage was hat of the "Britannia" in 1840, the ime occupied being 14 days 8 hours. ron steamers were first used in 1855, nd paddle-wheels gave way entirely o the screw after 1862. From its mall but successful beginning, Cu- ard's undertaking soon developed in- o one of the vastest of private com- iercial concerns. In 1878 it was nade into a joint stock company. He ied in London, April 28, 1865.

Cunaxa, in Babylonia, E. of the uphrates, about 60 miles N. of Baby- on, noted for the battle (401 B. C.) etween Cyrus the younger and his rother Artaxerxes Mnemon, in which he former was killed.

Cundinamarca, a central depart- nent of Colombia, extending E. to enezuela. It is the second largest epartment of the republic, with an rea of 8,500 square miles, excluding he territory to the S. E. of the Meta. he population is about 570,000 (in- luding 17,000 wandering Indians). he capital is Bogota, also capital of he republic.

Cuneiform Writing, the name pplied to the wedge-shaped charac- ers of the inscriptions on old Babylo- ian and Persian monuments; sometimes also described as "arrow-headed" or "nail-headed" characters. They appear to have been originally of the nature of hieroglyphs, and to have been invented by the primitive Akkadian inhabitants of Chaldea, from whom they were borrowed by the conquering Babylonians and Assyrians. The first date that can be assigned to the use of cuneiform writing is about 3800 B. C., and its use was continued until after the birth of Christ.

Cunningham, Allan, a Scotch poet and miscellaneous writer; born in Keir, Dumfriesshire, Dec. 7, 1784. When a youth he served as an apprentice to a stone-mason. His "Critical History of the Literature of the Last Fifty Years," and other books, prompted Sir Walter Scott to call him a genius. Died in London, Oct. 30, 1842.

Cupid, the god of Love, generally represented as a beautiful naked boy, winged, blind, and armed with a bow and a quiver full of arrows, with which he transfixed the hearts of lovers.

Cupola, in architecture, a spherical vault on the top of an edifice; a dome or the round top of a dome. The term is also applied distinctively to the concave interior as opposed to the dome forming its exterior.

Cupping, a surgical operation consisting in the application of the cupping-glass in cases where it is desirable to abstract blood from, or draw it to, a particular part.

Cur, a name sometimes applied indiscriminately to small dogs of any kind not highly valued, and in this way often particularly appropriated to dogs of mongrel breed.

Curacoa, an island of the Dutch West Indies in the Caribbean Sea; 46 miles N. of the coast of Venezuela; 36 miles long and 8 miles broad; capital Willemstad, principal harbor Santa Anna. It is hilly, wild, and barren, with a hot, dry climate. Yellow fever visits it every sixth or seventh year. Fresh water is very scarce, and serious droughts occur. The tamarind, cocoa-palm, banana, and other useful trees are reared; among them three varieties of orange, from one of which the Curacoa liquor is made. Sugar, tobacco, cochineal, and maize are also produced, but the staple exports are salt, and a valuable phosphate of lime used as a manure in its natural state, or made to yield valuable superphosphates. The islands of Curacao, Bonaire, Oruba (or Aruba), and Little Curacao, form a Dutch government, the residence of the governor being at Willemstadt. Pop. (1900) 51,693.

Curari, a resinous substance used by the Indians of South America for poisoning their arrows, said to be the aqueous extract of a climbing plant. It is a deadly poison when introduced into the blood through a wound. It acts on the motor nerves, arresting their functions, while the sensorial nerves retain their activity. Death ensues from paralysis of the respiratory organs. Curari is said to contain no strychnine, and taken into the stomach produces no ill effects.

Curassow, the name given to a large gallinaceous bird, more fully denominated the crested curassow. It is found in flocks in the forests of Mexico, Guiana, and Brazil.

Curate, properly an incumbent who has the care of souls; now generally restricted to signify the substitute or assistant of the actual incumbent.

Curator, in civil law, the guardian of a minor who has attained the age of 14, of persons under various disabilities, or of the estate of deceased or absent persons and insolvents. In learned institutions the person who has charge of the library or collections of natural history, etc., is often called the curator.

Curb, a disease in horses consisting of strain of the straight ligament which runs down the back of the hock; is most common in animals with straight small hocks and that conformation known as sickle hams; while like other strains it occurs from sudden and violent exertion, generally causing lameness, which is most apparent in trotting, and, in slight cases, usually decreases after the animal has been out for ten minutes.

Curcas, a large bush or a small tree, a native of the hotter parts of the tropics. The seeds are called purging-nuts.

Cure, the name applied in France to a priest with a cure of souls, properly the priest of a regular parochial church, but applied to any pastor.

Curfew, a bell rung every evening as a signal to the people to extinguish all fires and retire to rest. It was introduced into England by William the Conqueror, most probably as a safeguard against fire, but it was regarded by the English as a badge of servitude. The original time for ringing it was 8 o'clock P. M., but in a few places in England the custom is still kept up of ringing a bell at 9 o'clock P. M., and the old name is retained.

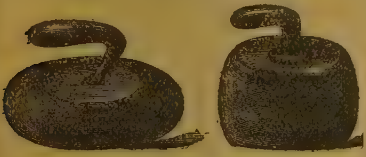
Curfew Laws, in the United States, laws intended to keep young people off the streets after a certain hour at night. While an ordinance of this kind has been in force in Salem, Mass., ever since the days of the Puritans, it is only of late years that other cities have seen its advisability and adopted the same measure. The law, in general, provides that persons under 15 years of age shall not be on the streets at night after 9 o'clock in summer, and 8 in winter, without the written consent of their parents or guardians.

Curia, anciently one of the thirty divisions of the Roman people, which Romulus is said to have established; also the place of assembly for each of these divisions.

Curia, Papal, in its stricter sense the authorities which administer the Papal primacy; in its common wider use all the authorities and functionaries forming the Papal court.

CURLEW.

Curlew, a wading bird, of the family of Snipes. Male of a bright ash color on the head and breast, here and there clouded with red, white on the belly, and spotted. Female more ash-colored, the red less pure. It is found in most parts of the world. Its food consists of earthworms, slugs, and other mollusks, insects, etc. There are several American species.



CURLING IRONS.

Curling, a game of Scotch origin, played on ice with various shaped stones, fitted with handles or grips.

Curran, John Philpot, an Irish advocate and orator; b. in Newmarket, County Cork, in 1750. In 1783 he obtained a seat in the Irish Parliament as member for Kilbeggan. In debate, Curran was usually charged with the duty of replying to opponents; for which important duty his ready speech and cutting retort admirably qualified him. But his sarcasm led him into several duels, in which fortunately little harm was done on either side. He was appointed Master of the Rolls in Ireland in 1806, an office he held till 1813, when he resigned. He died in London in 1817.

Currant, a delicious fruit. The dried currants of the stores are, if imported, the fruit of a small grape cultivated in what was the ancient Ithaca, at Patras in the Morea, in Zante, Cephalonia, etc. Just as good currants come from California. The fresh currants, red, golden, dark, and black, are among the best of American garden fruits.

Currency, the current money or circulating medium of a country, whether in coin or in paper. The metallic currency comprises the gold, silver, nickel, and copper coin in circulation in any country. In the United States, England, and France bronze coin is used instead of copper. Nickel minor coins, 25 per cent. nickel and 75 per cent copper, are used in the United States, Belgium, Switzerland, and Germany. Coins of platinum have been used in Russia. The relation between metallic and paper currency and various intricate questions thence arising have long occupied the attention of political economists. In the United States the dollar is the unit of value. The gold dollar contains 23.22 grains of gold and 2.58 grains of alloy, having a total weight of 25.8 grains. The silver dollar contains 371.25 grains of silver and 41.25 grains of alloy, having a total weight of 412.5 grains. Paper currency comprises treasury notes, bank-notes, bills of exchange, or checks, which are employed in business transactions as substitutes or representatives of coin. All money of the United States is redeemable in gold, which is the standard of value.

Curry, an Eastern condiment, a powder composed of cayenne-pepper, coriander, ginger, turmeric, and other strong spices.

Curry, Daniel, an American clergyman; born near Peekskill, N. Y., Nov. 26, 1809. He graduated at Wesleyan University, and, after holding various pastorates and professorships, was chosen President of Indiana Asbury University in 1854. Later he became editor of "The Christian Advocate," and in 1884 editor of the "Quarterly Review." He died in New York city, Aug. 17, 1887.

Curry, Jabez Lamar Monroe, educator, soldier, diplomat, and author; United States Minister to Spain, 1885–1888. Born Lincoln co., Georgia, June 5, 1825; graduated from the University of Georgia in 1843, and from the Dane Law School of Harvard University in 1845. Served in the Confederate Congress, and was lieutenant-colonel of Confederate cavalry. After the Civil War he was President of Howard College, Alabama, and Professor of English Philosophy and Constitutional and International Law in Richmond College, Virginia; President Board of Foreign Missions of Southern Baptist Convention, General Agent Peabody Education Fund and John F. Slater Education Fund, etc.; author of "Struggles and Triumphs of Virginia Baptists," "Civil History of the Confederate Government," etc.

Currying, the art of dressing cow-hides, calves'-skins, seal-skins, etc., principally for shoes, saddlery, or harness, after they have come from the tanner.

Curtin, Andrew Gregg, an American politician; born in Bellefonte, Pa., April 22, 1815. He studied law at Dickinson College, and was admitted to the bar. Entering politics, he became secretary of the commonwealth of Pennsylvania in 1854, governor in 1860, and again in 1863, being one of the most noted "war governors." In 1869 he was appointed minister to Russia. In 1873 he left the Republican party, and from 1881 to 1887 sat in Congress as a Democrat. He died in Bellefonte, Pa., Oct. 7, 1894.

Curtin, Jeremiah, an American linguist and antiquarian; born in Milwaukee, Wis., in 1838. He is a proficient in the Slavic tongues; has made addresses in Czech, and translated much from Russian and Polish.

Curtis, Mrs. Caroline Gardiner (Cary), pen name "Carroll Winchester," an American novelist; born in New York, in 1827. Her home is in Boston.

Curtis, Edward, an American medical scientist; born in Providence, R. I., June 4, 1838. He graduated at Harvard in 1859, and took his medical degree at the University of Pennsylvania in 1864. He was an army surgeon during the Civil War and since 1866 has been a member of the faculty of the College of Physicians, and Surgeons in New York city. He has made a specialty of microscopic study and the camera in connection with diagnosis.

Curtis, George Ticknor, an American lawyer; born in Watertown, Mass., Nov. 28, 1812. In addition to his eminence at the New York bar, he was noted as the author of an authoritative "History of the Constitution of the United States." He died in New York, March 28, 1894.

Curtis, George William, an American author; born in Providence, R. I., Feb. 24, 1824. He was an early abolitionist, and a leader in the Republican party from the first; for many years the editor of "Harper's Weekly," and the writer of the "Editor's Easy Chair" in "Harper's Monthly," besides the "Manners Upon the Road" series for "Harper's Bazar." He was also a lecturer of great popularity. He died on Staten Island, N. Y., Aug. 31, 1892.

Curtis, William Eleroy, an American journalist; born in Akron O., Nov. 5, 1850. He was for severa years director of the Bureau of American Republics, and was chief of the Latin-America department and historical section of the World's Columbian Exposition, 1891–1893.

Curtius, Ernst, a German archæologist and historian; born in Lubeck, Sept. 2, 1814; died July 11,1896.

Curtius, George, brother of the preceding; also a distinguished philologist, and notable for his application of the comparative method to the study of Greek and Latin languages; born in Lubeck, April 16, 1820. He died Aug. 12, 1885.

Curtius, Marcus, a Roman hero who devoted himself to the infernal gods for the safety of his country. According to the legend, a wide chasm having suddenly appeared in the Forum, the oracle declared that it never would close until Rome threw into it its most precious possessions. Thereupon Curtius, arming himself, mounted his horse, and saying that Rome contained nothing more precious to its greatness than a valiant citizen fully accoutred for battle, he solemnly threw himself into the abyss, which instantly closed over his head, B. C. 362.

Curtius, Rufus Quintus, a Roman historian, who wrote the history of Alexander the Great in 10 books, the first two of which are lost. The exact period in which he flourished is not known, no writer of any earlier date than the 12th century making any mention of his work.

Curule Magistrates, in ancient Rome, the highest dignitaries of the state, distinguished from all others by enjoying the privilege of sitting on ivory chairs when engaged in the public functions.

Curve, a line formed by a moving point which continually changes its direction in contradistinction to a straight line.

Curzon, George Nathaniel, an English colonial official; born in Kedleston, Jan. 11, 1859. He graduated at Oxford, and in 1885 entered the cabinet of Lord Salisbury, becoming Under-secretary of State for India in 1891 and foreign affairs in 1895. In the latter year he married Mary Victoria Leiter, daughter of Levi Z. Leiter, of Chicago, and in 1898 he was appointed Viceroy of India, and created a baronet, with the title of Lord Curzon of Kedleston. He presided at the great durbar at Delhi, when King Edward VII. was proclaimed emperor of India.

Cush, the name of a region inhabited by tribes of the Hamite family, so called. But there seems to have been an antediluvian Cush, and Cush the Hamite may have had his name from a settlement or allotment there. The chief habitations of the Cushites were to the S. of Egypt, in the extensive tracts called Ethiopia. They also appear to have spread in the Arabian peninsula.

Cushing, Caleb, an American jurist, statesman, and diplomatist; born in Salisbury, Mass., Jan. 17, 1800. He was United States commissioner to China; Attorney-General; counsel before the Geneva Arbitration Tribunal; minister to Spain. He died in Newburyport, Mass., Jan. 2, 1879.

Cushing, Frank Hamilton, an American ethnologist; born in Northeast, Pa., July 22, 1857. He became interested in Indian relics, and when 19 years old was made curator of the ethnological exhibit at the Centennial Exposition in Philadelphia. He settled among the Zuni Indians in New Mexico for the purpose of study. In 1881 he conducted excavations in Arizona, and in 1895 discovered archæological remains in Florida. In 1897 he became connected with the United States Bureau of Ethnology. He died in Washington, April 10, 1900.

Cushing, William, an American jurist; born in Scituate, Mass., March 1, 1732. He graduated at Harvard in 1751, became judge of probate in Maine in 1768, judge of the Massachusetts Superior Court in 1772, and chief-justice in 1777. Washington appointed him associate justice of the Supreme Court of the United States in 1789, and in 1796 offered him the post of Chief-Justice, which he declined. He died in Scituate, Mass., Sept. 13, 1810.

Cushing, William Barker, an American naval officer; born in Delafield, Wis., Nov. 4, 1842. He entered the navy as a volunteer officer in 1861, and distinguished himself in a number of brilliant operations. His greatest exploit was in October, 1864, when he volunteered to destroy the Confederate ram, "Albemarle," and on the night of Oct. 27 accomplished the feat. For this he received the thanks of Congress, and was made a lieutenant-commander, becoming a commander in 1872. He died in Washington, D. C., Dec. 17, 1874.

Cushing, The, a twin-screw, steel torpedo boat of the United States navy; 105 tons displacement.

Cushman, Charlotte Saunders, an American actress; born in Boston, July 23, 1816; appeared first in opera in 1834, and as Lady Macbeth in 1835. In 1844 she accompanied Macready on a tour throughout the Northern States, and afterward appeared in London. Miss Cushman retired from the stage in 1875, and died in Boston, Feb. 18, 1876.

Custard, a composition of milk or cream and eggs, sweetened with sugar and variously flavored; cooked in the oven or stew pan.

Custard Apple, a native of the West Indies, but is cultivated in India and the adjacent countries. It has yellow pulp. It is eaten, but is not so much prized as some other species of the genus.

Custer, Elizabeth (Bacon), an American writer; born in Monroe, Mich.; widow of Gen. George A. Custer. She is author of "Boots and Saddles, or Life in Dakota with General Custer"; "Tenting on the Plains, or General Custer in Kansas and Texas"; etc.

Custer, George Armstrong, an American soldier; born in New Rumley, O., Dec. 5, 1839; graduated at West Point in 1861; and served with distinction during the Civil War. He afterward had various cavalry commands in the West, and several times defeated hostile Indians. On June 25, 1876, with a force of 1,100 men, he attacked a body of Sioux, afterward found to number some 9,000, encamped on the Little Big Horn, in Montana, and he and his entire command were destroyed.

Custis, George Washington Parke, an American writer; born in Mt. Airy, Md., April 30, 1781; was the adopted son of George Washington. He wrote "Recollections of George Washington," etc. He died at Arlington House, Fairfax co., Va., Oct. 10, 1857.

Customs, indirect taxes levied on goods imported into, or exported from, a country. In the United States export duties are forbidden by the Constitution. The import duties are of five kinds, namely, ad valorem, compound, discriminating, minimum, and specific. Ad valorem duties are a tax of a certain percentage of the value of the merchandise. Compound duties are a mixture of specific and ad valorem duties and are applied to manufactured articles, the raw materials of which are dutiable. Discriminating duties are additions to the usual rates levied on goods imported from certain countries or portions of the world, or imported in vessels of certain nations. Specific duties are a tax of a certain specified sum for each pound or yard, or other unit of measure of the merchandise; usually irrespective of its quality or value. It is a disputed point whether specific or ad valorem duties are the best, all things considered, but the present tendency of opinion, both in the United States and in foreign countries, is in favor of the former.

Custos rotulorum, in England and Ireland, the principal magistrate of a county, who has charge of the official records.

Custozza, a village 10 miles S. W. of Verona, where the Italians have twice been utterly defeated by the Austrians. On July 23–25, 1848, Charles Albert was routed after severe fighting by Radetzky with a smaller force, and forced to retreat behind the Mincio; and on June 24, 1866, Victor Emmanuel with 130,000 men was defeated by the Archduke Albert with 75,000 men.

Cutch, a State in the W. of India, lying to the S. of Sind; under British protection; area, 6,500 square miles. Pop. of the State 558,415.

Cuthbert, St., a celebrated father of the early English Church; born, according to tradition, near Melrose, about 635. He became a monk, and in 664 was appointed prior of Melrose, which after some years he quitted to take a similar charge in the monastery of Lindisfarne. Still seeking a more ascetic life, Cuthbert then retired to the desolate isle of Farne. Here the fame of his holiness attracted many great visitors, and he was at last persuaded to accept the bishopric of Hexham, which he, however, resigned two years after, again retiring to his hermitage in the island of Farne, where he died in 687.

Cuticle, the epidermis or scarf-skin; the delicate and transparent membrane, which, destitute of nerves and blood-vessels, invests the whole surface of the body, except the parts occupied by the nails. It is designed to protect the true skin from injury.

Cutler, Manasseh, an American clergyman; born in Killingly, Conn., May 3, 1742. He was graduated at Yale in 1765, became a lawyer in 1767, a Congregational minister in 1771, and a chaplain in the Revolutionary army in 1776. After the war he helped form the Ohio Company and had a leading part also in the formation of the State of Ohio. He died in Hamilton, Mass., July 28, 1823.

Cutlery, a term applied to all cutting instruments made of steel. The finer articles, such as the best scissors, penknives, razors, and lancets are made of cast-steel. Table-knives, plane-irons, and chisels of a very superior kind are made of shear-steel, while common steel is wrought up into ordinary cutlery.

Cutter, a name given to small vessels. They are much like the sloop in rig. Such small vessels occasionally venture on long voyages, several instances being on record of their having crossed the Atlantic. In heavy weather, working to windward, the cutter shows to best advantage.

Cutter, Ephraim, an American physician; born in Woburn, Mass., Sept. 1, 1832; graduated at Yale University in 1852; practised medicine in his native city till 1875, in Cambridge and Boston till 1881, when he removed to New York city and began ractice there. He invented a large umber of surgical instruments.

Cuttlefish, a genus and family of ephalopodous mollusks, more com- ionly known as "devil fish." It has ght arms, provided with suckers, with hich it catches its prey. It is much readed by mariners when in small oats.

Cutty Stool, a low stool, the stool repentance, a seat formerly set part in Presbyterian churches in cotland, on which offenders against astity were exhibited before the ongregation and submitted to the inister's rebukes before they were eadmitted to church privileges.

Cuvier, Georges Chretien Leo- old Dagobert, Baron, one of the reatest naturalists the world has roduced; born in Montbeliard, rance, Aug. 23, 1769. His "Animal ingdom" has been frequently trans- ted, and forms the basis of all ar- ngements followed at the present me. Cuvier filled many offices of reat importance in the State; partic- larly those connected with education- institutions. He died in Paris, May 3, 1832.

Cuyaba, the capital of the Bra- lian State of Matto Grosso, occu- es pretty nearly the center of South merica. It stands on the left bank of ie Cuyaba river, 980 miles N. W. of io de Janeiro. Founded by gold-dig- rs in 1719, and wrecked by an earth- ake in 1746, it is now a well-built ace.

Cuyler, Theodore Ledyard, ergyman and writer; born in Aurora, . Y., Jan. 10, 1822, son of B. Led- rd and Louisa Frances (Morrell) uyler, graduated from Princeton in 341, and from Princeton Theological eminary in 1846; ordained to minis- y in 1848. From 1860 to 1890 pas- r of Lafayette Avenue Presbyterian hurch, Brooklyn. Author of "God's ight on Dark Clouds," "Christianity the Home," etc.

Cuyp, or **Kuyp, Jacob Gerritse,** Dutch painter; commonly called the ld Cuyp; born in Dordrecht, Nether- nds, in 1575. Jacob Cuyp's repre- ntation of cows, sheep, battles and ncampments, are clever; but his fame ests principally on his excellent por- aits. He died in Dordrecht in 1691.

BENJAMIN CUYP, a nephew of Albert, was born in Dordrecht, in 1608, and became a member of the guild there in 1631. He painted Biblical pieces in Rembrandt's style, and familiar scenes of country life.

Cuyuni, a river of South America, rises in Venezuela, flows first N., then E. through British Guiana, and joins the Mazaruni just above the confluence of the latter with the Essequibo. It has numerous rapids and falls.

Cuzco, an inland city of Peru, capital of a department of same name, and formerly capital of the empire of the Incas, about 400 miles E. S. E. of Lima. According to tradition, this town was founded in 1043 by Manco Capac, the first Inca of Peru. The grandeur and magnificence of the edifices, of its fortress, and of the Temple of the Sun, struck the Spaniards with astonishment in 1534, when the city was taken by Francis Pizarro. On the hill toward the north are yet seen the ruins of a fortress built by the Incas, and which has a communication, by means of subterranean passages, with three forts built in the walls of Cuzco. All the descendants of the Incas resided in a particular quarter of the city.

Cyanosis, the blue disease; the blue jaundice of the ancients. It is usually due to malformation of the heart, whereby the venous and arterial currents mingle.

Cyanotype Process, a photographic process in very common use by architects and engineers for copying plans, producing an image with white lines on a blue ground, commonly known as "blue prints."

Cyathea, a genus of tree ferns, extensive and widely spread, having representatives in South America, in Mexico, South Africa, India, China, and the eastern islands of those of the Pacific. The common tree-fern is the typical species. It is found in the West Indies and in the warmer parts of the American continent.

Cybele, also AGDISTIS and DINDYMENE, an ancient goddess whose worship was universal in Phrygia, and widely spread in Western Asia as that of "the great mother" or "the mother of the gods." The Roman priests of Cybele were often called Galli. In art Cybele is usually represented seated on a throne, adorned with the mural crown, with lions crouching to the right or left, or sitting in a car drawn by lions.

Cyclades, the principal group of islands in the Grecian Archipelago now belonging to the Kingdom of Greece, so named from lying round the sacred island of Delos in a circle. They are of volcanic formation and generally mountainous. Some are very fertile, others almost sterile. The inhabitants are excellent sailors. Population 134,747.

Cycle, a circle; is used for every uniformly returning succession of the same events. On such successions or cycles of years rests all chronology, particularly the calendar.

Cyclometer, an invention for measuring and recording the distance traveled by wheeled vehicles, extensively used in cycling. Its most important application is in railroading. The apparatus is connected with the wheels of a car, and by recording the number of revolutions tells the number of miles traveled. It is purely automatic, and in addition, by an attachment of extreme ingenuity, every inequality in the roadbed of a railroad is detected and located.

Cyclone, a circular or rotary storm or system of winds, varying from 50 to 500 miles in diameter, revolving round a center, which advances at a rate that may be as high as 40 miles an hour, and toward which the winds tend. Cyclones of greatest violence occur within the tropics, and they revolve in opposite directions in the two hemispheres — in the southern with, and in the northern against, the hands of a watch — in consequence of which, and the progression of the center, the strength of the storm in the northern hemisphere is greater on the S. of the line of progression, the case being reversed in the southern hemisphere. An anticyclone is a storm of opposite character, the general tendency of the winds in it being away from the center while it also shifts within comparatively small limits. Cyclones are preceded by a singular calm and a great fall of the barometer. The western States are visited at times by destructive cyclones.

Cyclopædia, or **Encyclopa** in modern usage a work professi give information in regard to whole circle of human knowledg in regard to everything included in some particular scientific or co tional division of it.

Cyclopean Architecture, a of large, irregular stones, unhewn uncemented. In Greece such were fabled to be the work of Cyclopes, or one-eyed giants. walls of Tiryns, near Nauplia a example of the ruder style of C pean masonry. They are of irre stones, from 6 to 9 feet long, fr to 4 feet wide, and from 2 to 3 thick; the interstices are filled u small stones, but no mortar is The walls of Mycenæ and of E are examples of more advanced clopean architecture. These struc are commonly believed to have reared by a race called Pelasg probably more than 1,000 years b the Christian era. Masonry parta more or less of the Cyclopean ch ter is seen in some parts of Ame in Persepolis, and elsewhere in and in several parts of W. Eu The walls of Cuzco, and the of what is called the House of M Capac, on an island in the lak Titicaca, in Peru, are interesting amples of the Cyclopean archite of the New World.

Cyclops, one of the people c cyclopes, alleged to be a savage of one-eyed giants, resident in Si They owned no social ties and ignorant of cultivation.

Cyclorama, a painted conspe of a scene, so arranged as to afford eye a single comprehensive view. tles have been thus presented in United States in the form of circ panoramas.

Cyclosis (a surrounding, a ci lation), the name designating cer still very imperfectly unders movements of the contents or cell plants — formerly supposed to b partial circulation of the juices. they have been observed in plant the most different natural orders, presumed that they prevail throug the vegetable kingdom.

Cydias, a painter; born in the land of Cynthus, one of the Cycla and who flourished Olymp. 104. Hortensius, the orator, purchased his painting of the Argonauts for 144,000 sesterces (nearly $5,600). This same piece was afterward transferred by Agrippa to the portico of Neptune.

Cygnus, (the Swan), a large Northern constellation in the Milky Way, one of Ptolemy's original 48.

Cylinder, a well-known solid whose cross-section at any point of its length gives always the same circle.

Cymbals, musical instruments consisting of two hollow basins of brass, which emit a ringing sound when struck together. They are military instruments, but are occasionally used in orchestras.

Cymbeline, an ancient King of Great Britain in a well-known play of Shakespeare called by his name. By his first wife he had a daughter, Imogen, who married Posthumus Leonatus. His second wife had, by a former husband, a son named Cloten. Shakespeare borrowed the name from the half-historical Cunobelinus in Holinshed's "Chronicle," of whom several coins are extant.

Cymri, a branch of the Celtic family of nations which appears to have succeeded the Gaels in the great migration of the Celts W., and to have driven the Gaelic branch into Ireland and the Isle of Man, and the Highlands of Scotland, while they themselves occupied the S. parts of Great Britain. At a later period they were themselves driven out of the Lowlands of Great Britain by the invasions of the Angles, Saxons, and Jutes, and compelled to take refuge in the mountainous regions of Wales, Cornwall, and the N. W. of England. Wales may now be regarded as the chief seat of the Cymri.

Cynewulf, an Anglo-Saxon or early English poet, whose name we only know from its being given in runes in the poems attributed to him.

Cynics, a sect of philosophers among the Greeks, so called from their snarling humor, and their disregard of the conventional usages of society.

Cypress, a tall evergreen conifer, indigenous to Persia and the Levant, but found all over the adjacent regions, though not to any extent in India. It is planted in burial grounds, especially in those of the Mohammedans and of the Armenians. The modern Romans admit it into their private gardens. The Greeks made their coffins of its wood, and some Egyptian mummy chests are of the same material. It is used in Candia, Malta, and other places for building purposes. The doors of St. Peter's at Rome are formed of it, and have lasted 1,100 years. The gates of Constantinople, also built of it, continued the same length of time. Cabinetmakers and wood turners find it suitable for their respective crafts.

Cyprian, St., Thascius Cæcilius, was probably a native of Carthage, taught rhetoric there, and about 246, when nearly 50 years of age, was converted to the Christian faith. He was soon after chosen presbyter, adopted a rigidly ascetic manner of life, and was appointed Bishop of Carthage in 248. When the persecution under Decius fell on the Churches, Cyprian ran away and concealed himself for nearly two years. He was then received as bishop again, but during the next persecution, under Valerianus, he was arrested and banished. After a year he was recalled, but as he refused to make the required sacrifice to the gods, he was put to death, 258.

Cyprus, an island lying on the S. of Asia Minor, and the most easterly in the Mediterranean. Its greatest length is 145 miles, maximum breadth about 60 miles; area, 3,678 square miles. The chief features of its surface are two mountain ranges, both stretching E. and W., the one running close to the N. shore, and extending through the long N. E. horn or prolongation of the island, the other and more massive (Mount Olympus) occupying a great part of the S. of the island, and rising in Troodos to 6,590 feet. Between them is the bare and mostly uncultivated plain called Messaria. There is a deficiency of water. The climate is, in general, healthy. The mountains are covered with forests of excellent timber, and the island is esteemed one of the richest and most fertile in the Levant. Agriculture is in a very backward state, and locusts sometimes cause great damage.

In 1878 Cyprus was ceded to Great Britain by the convention of Constantinople concluded between England and Turkey, its reversion to Turkey being provided if Russia should give up Batoum and Kars. Great Britain was also bound to pay a subsidy to Turkey annually amounting to about $465,000, but this is not paid directly, being retained as an offset against British claims on Turkey. The island has become much more prosperous under British administration. The head of the government is the chief-commissioner. Pop. (1901) 237,022, of whom three-fourths belong to the Greek Church.

Cyrene, the capital of Cyrenaica, was founded by Battus and his followers from Thera, B. C. 631. Seven kings of this race succeeded, and about B. C. 450 a republic was established. It was afterward made subject to Egypt, and passed under the dominion of Rome, B. C. 74. The ruins of this town, called Ghrennah by the Turks, attest its former magnificence.

Cyrenius, a Grecized form of Publius Sulpicius Quirinus, named in Luke ii. as governor of Syria.

Cyril, the name of three fathers of the Christian Church.

Cyrus, surnamed THE ELDER, founder of the Persian monarchy, was son of Cambyses, a Persian noble, and of Mandane, daughter of Astyages, king of Media. The principal exploits attributed to him are the incitement to a revolt of the Persians, and consequent defeat of Astyages and the Medes, when he became king, B. C. 559; the conquest of Lydia and capture of Crœsus; the siege and capture of Babylon in 538, and the invasion of Scythia, where he was defeated and slain by Tomyris, queen of the Massagetæ, 529. He was interred at Psargardæ, and his tomb was visited by Alexander the Great.

Cyst (a bladder), a word sometimes used in the original sense as applied to hollow organs with thin walls, as the urinary bladder and gall-bladder; but commonly reserved for the designation of pathological structures or new formations within the body having the bladder form.

Cystitis, inflammation of the bladder.

Cytherea (from Cytherea, a nam for Venus, so called because she said to have sprung from the foam c the sea near Cythera, now Cerigo, a island on the S. E. of the Morea), genus of conchiferous mollusks. The are found in all seas.

Cytisus, a genus of plants. Th members of the genus are shrubs c small trees, sometimes spiny, wit leaves composed of three leaflets, an with yellow, purple, or white flower They are very ornamental plants. Th best known species is the common laburnum.

Cyzicus, a peninsula of Asia Mino 60 miles S. W. of Constantinople. I was once an island, and the site c an ancient town of the same name.

Czajkovski, Michal, a Polis novelist; born in Helczyniec, Russi in 1808. He entered the Turkis army in 1851, embraced Mohamm danism, and rose to high rank; lat he went back to the Ukraine and co formed to the Russo-Greek religio He struck a new and original vein i fiction-writing. He died in 1876.

Czar, a king; the title of the En peror of Russia; employed in Russi itself, in the form of tsar. It wa first assumed by Ivan II. in 1579.

Czarevna, the title of the wife c the czarowitz.

Czarina, the wife of the Emperc of Russia.

Czarowitz, Czarevitch, or **Czarewitch,** the title of the oldest son c the Emperor of Russia.

Czartoryski, Adam, Prince, prominent actor in the Polish revol tion of 1830; born at Warsaw in 177 When the revolution of 1830 brol out, he devoted all his energies to tl service of his country. As preside of the provisional government, l summoned the Diet to meet in D cember, 1830, and in the followir month was placed at the head of tl national government. He resigned h post after the terrible days of Au 15 and 16, and served as a commc soldier during the last fruitless stru gle. He was excluded from the an nesty of 1831, and his estates in P land confiscated. His latter yea were spent in Paris, where he died i 1861.

Czechs, the extreme W. branch of e great Slavonic family of races. he Czechs have their headquarters Bohemia, where they arrived in the h century. The origin of the name is known. The total number of the zechs is about 6,000,000, nearly all whom live in the Austrian Empire. he Czechs proper, in Bohemia, num- r about 2,700,000. They speak a avonic dialect of great antiquity d of high scientific cultivation. The zech language is distinguished as ghly inflectional. Like the Greek it s a dual number, and its manifold clensions, tenses, and participial for- ations, with their subtle shapes of stinction, give the language a com- ex grammatical structure. The al- habet consists of 42 letters. In mu- cal value the Czech comes next to alian.

Czenstochau, or **Czenstochowa,** town of Poland, 148 miles S. W. of arsaw by rail. A Catholic monas- ry, founded here about 1382, is vis- ed yearly by 50,000 to 60,000 pil- ims, as possessing the famous Black Virgin," a murky painting of yzantine origin, but ascribed by leg- d to St. Luke himself. In 1655 zenstochau was the only place in oland which offered resistance to harles Gustavus of Sweden, when 70 onks and 150 soldiers for 38 days ld out against 10,000 men. The habitants, 15,500 in number, carry a considerable trade in sacred pic- res and rosaries.

Czermak, John Nepumuk, a Ger- an physiologist and physician; born Prague, June 17, 1828; Professor Physiology at Jena. He was the ventor and introducer of the laryn- oscope and rhinoscope, and of a new ethod for the therapeutical and sur- ical treatment of diseases of the epi- lottis and throat. His work on the ryngoscope has been translated and ublished in several languages. He ied Sept. 16, 1873.

Czernowitz, the capital of the ustrian Province of Bukowina. The niversity here was founded in 1875. he manufactures and trade are stead- y developing. Pop. (1900) 67,622.

Czerny, George, Hospodar of Ser- ia; born in the neighborhood of Bel- rade about 1770. His real name was George Petrovitch, but he was called Czerny or Kara George (Black George). He was the son of a peasant and in his youth, having killed a Turk, was obliged to flee to Austria. While serving in the Austrian army he fought the Turks for two or three years, but left the service to become a bandit, confining his robberies, however, to the property of Moslems. When the country became disturbed by the depredations of the Janizaries he became leader of a Servian uprising. Encouraged by the countenance of Russia, the revolt became formidable and Czerny George won several victories. In 1806 the Sublime Porte acknowledged the independence of Servia, continuing, however, to demand tribute. This show of sovereignty irritated the Servians and Black George attacked and captured both Belgrade and Schabaz, the Turkish inhabitants and the Janizary forces being massacred. The successful commander-in-chief of the Servians was now looked on as the real ruler of his country.

War broke out between Russia and Turkey in 1809. Czerny George took sides against Turkey, hoping to achieve the deliverance of all the Slavs under Turkish dominion. When the Sultan's troops invaded the soil of Servia, its chief was forced to turn to Russia for assistance. The treaty of 1812 disappointed his hopes by placing Servia under Moslem control, and when the Turkish army re-entered Servia, Czerny George fled again to Austria. After an exile of four years he returned in the hope of arousing a successful insurrection, but was assassinated July 27, 1817, by a Servian officer.

Czerny, Carl, an Austrian pianist and musical composer; born in Vienna, Feb. 21, 1791. Among his pupils were Liszt, Thalberg, and other distinguished musicians. He died July 15, 1857.

Czuczor, Gergely, a Hungarian poet and philologist; born in Audod, Dec. 17, 1800. His two fine hero-ballads, "The Battle of Augsburg," and "The Diet of Arad," brought him instant celebrity. In 1848 he published "Reveil," a passionate appeal to Hungarian national sentiment, and was imprisoned for it. He died in Pest Sept. 9, 1866.

D

D d, the fourth letter in our alphabet, as also in the Latin and Greek, and in the Phœnician from which it passed to the Greeks, being ultimately of Egyptian origin. Among Roman numerals, D signifies 500, but was not used as a numerical designation till 1,500 years after Christ. If a line was marked over it, it signified 5,000.

Daar, Ludvig, a Norwegian statesman and historian; born in Aremark, near Frederikshald, Dec. 7, 1834. He was for 20 years an active member of the Storthing; was several times minister in the various Radical cabinets; and won several gold medals with his historical essays on ancient Norway. He died in Christiania in May, 1893.

Dabaira, an idol of the savages of Panama, to whose honor slaves are burnt to death.

Dabis, a colossal idol of brass worshiped in Japan.

Dabney, Charles William, an American consular officer; born in Alexandria, Va., March 19, 1794. He was made United States consul in the Azores in 1826. He died in Fayal, Azores, March 12, 1871.

Dabney, Charles William, an American scientist; born in Hampden-Sidney, Va., June 19, 1855. He graduated at Hampden-Sidney College in 1873. Four years later he became Professor of Chemistry in Henry and Emory College, and in 1880 was appointed state chemist of North Carolina. Since 1887 he has been president of the University of Tennessee.

Dabney, Robert Lewis, an American author; born in Louisa co., Va., March 5, 1820. He is a Presbyterian clergyman, and since 1883 has filled the chair of moral philosophy i the University of Texas.

Dabney, Virginius, an America author; born in Elmington, Va., Fe 15, 1835.

Daboll, Nathan, an America educator and writer; born about 175 He is best known for his share in th "New England Almanac," which h began in 1773. He died in Groto Conn., March 9, 1818.

Daboll, Nathan, an America writer; born in Connecticut, in 178 He was son of the preceding, an compiled the "New England Alma nac" begun by his father. He is th author of "Daboll's New Arithmetic. He died in 1863.

Dace, a small river fish swimmin in shoals and inhabiting chiefly dee clear streams with a gentle curren It seldom exceeds a pound in weight.

Dach, Simon, a German lyrist born in Memel, in 1605. His spiritua songs, "In Thy Control, O Lord, "Be Comforted, my Soul," etc., ar hardly surpassed by any composition of the day. He died in 1659.

Dachshund, a name adopted fro the German, signifying "badger-dog. The dachshund is a small dog, weig ing about 20 pounds, with short croo ed fore-legs, and an extremely lon body, its head rather resembling tha of a miniature bloodhound. It strong, large paws enable it to di rapidly.

Dacia, a large tract of the Roma empire beyond the Danube; now co prising Moldavia, Wallachia, and po tions of Transylvania and Hungary.

Dacoits, bands of robbers in th East, especially in Burma, Indi where for years they were the terror of the country.

Da Costa, Izaak, a Dutch poet and theologian; born in Amsterdam, Jan. 14, 1798. He died in Leyden, April 28, 1860.

Da Costa, Jacob M., an American physician; born in St. Thomas, W. I., Feb. 7, 1833. He graduated at Jefferson Medical College, practising in Philadelphia. In 1863 he became Lecturer in Jefferson Medical College, in 1872 Professor of the Theory and Practice of Medicine there, and in 1891 Professor Emeritus. In 1895 he was chosen president of the College of Physicians and Surgeons in Philadelphia. He died in Villa Nova, Pa., Sept. 11, 1900.

Daddy-long-legs, or **Crane-fly,** a familiar insect. The body, the legs, and the antennæ are very long, the insect is toward an inch in length, is abundant from July to October in meadows and gardens and is familiar to everyone. The female is often seen laying her eggs in damp places on the ground.

Dado, in classical architecture, the middle part of a pedestal; the solid rectangular part between the plinth and the cornice. In the interior of houses it is applied to a skirting of wood several feet high round the lower part of the walls, or an imitation of this by paper or painting.

Dædalus, a figure in Greek mythology who personified the beginning of the arts of sculpture and architecture.

Daffodil, the popular name of a plant which is one of the earliest ornaments of our gardens, being favorite objects of cultivation.

Daghestan, a province of Russia, in the Caucasus, stretching along the W. side of the Caspian Sea; area, 11,332 square miles. Its fertile and tolerably cultivated valleys produce good crops of grain, and also silk, cotton, flax, tobacco, etc. The inhabitants, almost all professed Mohammedans, consist chiefly of races of Tartar origin and of Circassians. Capital, Derbend. Pop. (1901) 586,636.

Dago, an island belonging to Russia, to the S. W. of the entrance of the Gulf of Finland, with productive fisheries. The inhabitants, almost all Swedes, are about 10,000.

Dagoba, the E. topes, or tumuli, mostly contained relics, the worship of these objects being one of the principal characteristics of Buddhism. These were termed dagobas, of which the word pagoda appears to be a corruption. In a Buddhist temple, the dagoba is a structure which occupies the place of an altar in a Christian church.

Dagon, a national god of the Philistines worshiped at Gaza and elsewhere. The word has by some been derived from dagan, meaning corn, but the general opinion is that it comes from dag, a fish, and that Dagon was the fish-god. Probably he had the head and hands of a man with the body and tail of a fish. The temple of Dagon at Ashdod continued beyond the period of the Old Testament, but it was destroyed by Judas Maccabæus about 148 B. C.

DAFFODIL.

Daguerre, Louis Jacques Mande, a French inventor; born in Cormeilles, France, in 1789. He was at first a scene painter at Paris, and by his original devices soon took a front place in the art. While engaged in this way and in painting panoramic views he discovered a method of representing moonlight, day, and night, changes of season, and so on, by the proper illumination of a large transparent canvas painted on both sides. The pictures were first exhibited in Paris in 1822, and shortly afterward in London. As early as 1814, Nicephore Niepce had directed his attention to photography, and in 1827 had delivered pictures on metal to the Royal Society. In 1826 he had been joined by Daguerre, and a formal agreement was made between them. Niepce died July 5, 1833, and had apparently given up the hope of succeeding with a place sensitized by iodine. Daguerre persevered, and at length produced the method which has been since called daguerreotype. The process was examined and reported on by the French government, Daguerre was made an officer of the Legion of Honor, and an annuity of 6,000 francs was settled on him, and one of 4,000 on the son of Niepce. On July 10, 1851, he died in Petit-Brie, near Paris, where a monument has been erected to him. Daguerreotype process is now completely out of use, its place having been taken by other processes.

Dagupan, a town on the island of Luzon, in the Philippines, where the Lingayen river enters the gulf of the same name; on the railroad from Manila, and about 130 miles N. W. of that city. It was one of the strongholds of the Filipino insurgents and the point where most of the filibustering expeditions landed. Soon after hostilities between the United States and the insurgents opened the American military authorities were unanimous in the opinion that Dagupan should be made a base of operations, but sufficient troops were lacking till November, 1899, when an expedition left Manila for this place under command of General Wheaton. A landing from the transports, supported by a number of naval vessels, was made at Lingayen, a suburb of Dagupan, which has a sheltered harbor and had hastily constructed earth-works. The works and town were shelled, but there was no response from shore. As the American troops were being landed in steam launches a long line of insurgents suddenly appeared among the sand dunes and fired upon the troops. The Americans returned the fire, completed their landing, and drove the insurgents out of Dagupan, and then started on a march to the E. and S. in the expectation of surrounding Aguinaldo at Tarlac, about 50 miles to the S., where he had established his headquarters. Population 16,000.

Dahabeah, a boat in use on the Nile, for both freight and passenger traffic.

Dahl, Konrad Neuman Hjelm, a Norwegian story-teller; born in Drontheim, June 24, 1843. He is author of a series of stories and novels of Norwegian and Lapp life.

Dahl, Michael, a Swedish painter; born in Stockholm, Sweden, in 1658; died in London, Oct. 20, 1743.

Dahlgren, Fredrik August, a Swedish poet and dramatist; born in Nordmark, Aug. 20, 1816. He has written many dialect songs and ballads. He has translated a great many dramas from foreign languages, and has written a history of the Swedish stage.

Dahlgren, John Adolpho, an American naval officer; born in Philadelphia, Pa., Nov. 13, 1809; entered the navy as a midshipman in 1826, and rose through the grades to the rank of rear-admiral. He rendered efficient service in suppressing blockade-running during the Civil War. He invented the Dahlgren gun. He died in Washington, D. C., July 12, 1870.

Dahlgren, Madeleine Vinton, an American author; wife of Rear-Admiral Dahlgren; born in Gallipolis, O., about 1835. She died in Washington, D. C., May 28, 1898.

Dahlgren, Ulric, an American military and naval officer; born in Bucks Co., Pa., in 1842; son of Rear-Admiral Dahlgren. At the outbreak of the Civil War he became aide, first to his father and later to General Sigel, and was Sigel's chief of artillery at the second battle of Bull Run. He distinguished himself in an attack on Fredericksburg and at the battle of Chancellorsville, and on the retreat of the Confederates from Gettysburg he led the charge in Hagerstown. He lost his life in a raid undertaken for the purpose of releasing national prisoners at Libby prison and Belle Isle, ear King and Queen's Court-house, a., March 4, 1864.

Dahlgren Gun, (named from ear-Admiral John A. Dahlgren), a un in which the front portion is ma- erially lightened and the metal trans- erred to the rear, giving the "bottle- hape."

Dahlia, (so called after Andrew ahl, a Swedish botanist and a pupil f Linnæus, by whom this beautiful arden plant was first brought into ultivation). The tree dahlia has of ecent years been imported from Mex- o. It attains a height of 12 to 14 eet. The genus was first carried over nto Spain about 1787. A beautiful armine is obtained from the corolla.

Dahlmann, Friedrich Chris- oph, a German historian; born in Vismar, May 13, 1785; was profes- or at Gottingen and afterward at onn. Among his principal works is history of the English Revolution. Ie died in Bonn, Dec. 5, 1860.

Dahn, Felix, a German historian; orn in Hamburg, Feb. 9, 1834. He as Professor of Jurisprudence suc- essively in the universities of Munich, Vurtzburg, Konigsberg, and Breslau. mong his historical works is "The ings of the Germans." He has also ritten epic and lyric poems, remark- ble for strong thought, wide horizon, nd verbal richness.

Dahomey, (native name of the eople, Dauma or Dahome), since 892–1894 a French protectorate in Vestern Africa, between Lagos (Brit- sh) and Togoland (German), with an rea stated at 4,000 square miles. The oast strip is not Dahomey proper, ut, as the Slave Coast, is part of rench Guinea. The long lagoon vhich, shut in from the ocean by a rotecting bank of sand, affords an asy route along nearly the whole of his coast, extends in Dahomey from ts W. frontier almost to the Denham agoon in the E. About midway is the ort of Whydah, whence a road ex- ends inland to Abomey, a distance of 5 miles. The Avon and Denham agoons receive the rivers of the coun- ry, none of which are very important. he soil is a rich, red-colored clay, nd extremely fertile.

The people are negroes, of the Ewe roup, generally of small stature, but very robust and active. They are sociable, equally fond of dancing and of rum, but warlike and prone to theft. The Dahomeyan kingdom dated from the beginning of the 18th century, and reached its zenith under Gezo, who ruled from about 1818 to 1858. Since then its power declined, and even its population has fallen off; but little reliance can be placed on the estimates of the numbers which range from 150,000 to 900,000. The army was 10,000 men; the Amazons (devoted to celibacy), who were distinguished for their bravery and ferocity, were about 1,000. Fetich-worship prevails, taking the form of serpent-worship along the coast; a temple with over a hundred of these sacred snakes exists at Whydah. The king was the most absolute of despots. Wholesale murder was one of the chief features in religious and state ceremonies. The revenue formerly depended greatly upon the sale of slaves; but the vigilance of the cruisers employed to prevent the traffic ruined the trade. The late king of Dahomey has for years been a State prisoner in the French West Indies.

Daiboth, a Japanese idol of colossal size. Each of her hands is full of hands.

Daikoku, the god invoked specially the artisans of Japan.

Daimio, the official title of a class of feudal lords in Japan.

Daimonogini, a deity greatly venerated in Japan.

Dainiz-no-Rai, the Japanese sun-god.

Dairy, the department of a farm which is concerned with the production of milk and its manufacture into butter and cheese.

Dais, a platform or raised floor at the upper end of an ancient dining-hall, where the high table stood; also a seat with a high wainscot back, and sometimes with a canopy, for those who sat at the high table. The word is also applied to the high table.

Daisy, the name of well-known plants and flowers. Everyone feels the charm of this familiar little flower, nor is the appreciation confined to this country.

Dakota, or **Dakotah,** the name by which the Sioux Indians call themselves.

DAKOTA CHIEF.

D'Albert, Eugen, an Anglo-German pianist; born in Glasgow, Scotland, April 10, 1864. He visited the United States in 1889, and since 1895 has been royal pianist at the Court of Saxony.

Dale, Richard, an American naval officer; born in Norfolk, Va., Nov. 6, 1756; was sent to sea at 12 years of age, and at 19 had the command of a merchant-vessel. While serving as a midshipman on board of the American brig of war "Lexington," he was taken by a British cutter; but effected his escape into France, where he joined Paul Jones, then commanding the American ship "Bon Homme Richard," and was the first man that boarded the English frigate "Serapis," which was captured. In 1801 he had the command of an American squadron and hoisted his pennant on board the "President." He died in Philadelphia, Feb. 24, 1826.

Dalecarlia, or **Delarne,** a tract in Sweden, the name meaning "valley-land." Here Gustavus Vasa found a refuge from the Danes, and assembled the band of followers with whom he began the war of liberation.

Dalin, Olof von, a Swedish poet and historian; "father of modern Swedish literature"; born in Vinberga, in Halland, in August, 1708. He died Aug. 12, 1763.

Dall, Caroline Wells, an American author; born in Boston, Mass., June 22, 1822. She has been an industrious literary worker, and is the author of many books.

Dall, William Healey, an American naturalist; born in Boston, Mass., Aug. 21, 1845; is a member of the United States Geological Survey and of many of the scientific societies.

Dallas, a city and county-seat of Dallas Co., Texas, and the metropolis of N. Texas. Area, 10 square miles.

Dallas, Alexander James, an American statesman; born in the Island of Jamaica, June 21, 1759. He studied law in London and settled in Philadelphia in 1783. He became eminent at the bar, and was Secretary of the Treasury under Madison. He died in Trenton, N. J., Jan. 14, 1817.

Dallas, George Mifflin, an Amer-American statesman; born in the Is-Pa., July 10, 1792; son of the preceding. He graduated at Princeton College, was admitted to the bar, and soon after entered the diplomatic service. In 1831 he was elected a United States Senator from Pennsylvania. He was United States minister to Russia from 1837 to 1839, and in 1844 was elected Vice-President of the United States. In 1846 his casting-vote as President of the Senate repealed the protective tariff of 1842. He was United States minister to Great Britain from 1856 to 1861. He died in Philadelphia, Dec. 31, 1864.

Dalles, the name given to various rapids and cataracts in North America. The Great Dalles of the Columbia are about 200 miles from the mouth of that river; the Dalles of the

St. Louis are a series of cataracts near Duluth, Minn.

Dalmatia, a province of Austria with the title of kingdom, the most S. portion of the Austrian dominions. It consists of a long narrow triangular tract of mountainous country and a number of large islands along the N. E. coasts of the Adriatic Sea, and bounded N. by Croatia and N. E. by Bosnia and Herzegovina. In breadth it is very limited, not exceeding 40 miles in any part; its whole area is 4,940 English square miles. The population is divided between the Italians of the coast towns and the peasants of the interior, Slovenian Slavs. The majority are Roman Catholics. Pop. (1900) 593,783.

Dalmatian Dog, a variety of dog closely resembling in size and shape the modern pointer. It is often kept in stables, becomes attached to the horses, and may be seen running after carriages.

Dalmatic, or **Dalmatica,** a long, white gown with sleeves, worn by deacons in the Roman Catholic Church over the alb stole.

Dalny, city and free port of Russia, 45 miles N. of Port Arthur; at the E. terminus of the Siberian railway; connected with St. Petersburg by the Central Manchurian railway. It was established expressly for a commercial seaport by an edict of the Czar of Russia, and was thrown open to the commerce of all nations, Dec. 1, 1901. Dalny is situated on the Liao-tung Peninsula which extends S. into the Gulf of Pechili, China.

The harbor is one of the finest and deepest on the Pacific. It is free from ice and is well protected by breakwaters. Five great piers are being built of blocks of stone and cement which weigh from 20 to 50 tons each. These docks will extend from a quarter of a mile to half a mile in length, and will vary in width from 60 to several hundred feet. They will be furnished with many railroad tracks, large elevators and warehouses, electric and gas lights, and between them, for a distance of 2 miles, will be erected docks for foreign steam and sailing craft. A large breakwater is being made across the piers, which will allow ships to load or unload regardless of weather. There are also being built two first-class dry docks. The new city is divided into the administrative, wholesale, retail, and residential sections. Pop. (1901) 50,000.

Dalrymple, Sir David, (better known as LORD HAILES), a Scotch lawyer and antiquary; born in Edinburgh, Oct. 27, 1726. He published numerous works on Scotch history, antiquities, etc.; died Nov. 29, 1792.

Dalton, John Call, an American physiologist; born in Chelmsford, Mass., Feb. 2, 1825. He graduated at Harvard and at Harvard Medical School. He was successively Professor of Physiology at the University of Buffalo, at the Vermont Medical School, at the Long Island College Hospital, and at the New York College of Physicians and Surgeons. He served as an army surgeon throughout the Civil War. He died in New York city, Feb. 11, 1889.

Daly, Charles Patrick, an American jurist and author; born in New York city, Oct. 31, 1816; had a distinguished judicial career in his native city, retiring on account of age in 1886. He was president of the American Geographical Society for many years prior to his death, Sept. 19, 1899.

Daly, (John) Augustin, an American dramatist, and proprietor of Daly's Theater, New York; born in Plymouth, N. C., July 20, 1838. He died in Paris, June 7, 1899.

Dalyell, or **Dalzell, Thomas,** a Scotch soldier; born about 1599. He was taken prisoner fighting on the royalist side at Worcester, and afterwards escaped to Russia, where he was made a general. Returning to England at the Restoration, he was made commander-in-chief of the forces in Scotland, and made himself notorious for his ferocity against the Covenanters. He died in 1685.

Dam, a bank or construction of stone, earth, or wood across a stream for the purpose of keeping back the current to give it increased head, for holding back supplies of water, for flooding lands, or for rendering the stream above the dam navigable by increased depth.

Damaraland, a territory in the W. of South Africa, between Namaqualand and Ovampoland proper extending from the Atlantic to about 19° 45′ E. lon. Behind the waterless coast region rises a mountain district, with peaks over 8,500 feet above the sea; and further inland stretch wide prairies. The mountains are rich in minerals, and vegetation is confined to the valleys and to the prairie region. The Damaras number about 80,000, of whom 50,000 live in the mountain district; they are nomads, and own large flocks and herds. The Hill Damaras, in the N. E., however, who are a much lower type, now speak Hottentot.

Damascus, a celebrated city, capital of the Turkish vilayet of Syria; finely situated on a plain, about 180 miles S. by W. Aleppo; supposed to be the most ancient city in the world. It is 6 miles in circumference, and is surrounded by a dilapidated wall. The plain on which the city stands is of great extent, and is covered with the most beautiful gardens and orchards, irrigated by the limpid waters of the Barrada, forming a waving grove of more than 50 miles in circuit. The interior of Damascus by no means corresponds with the beauty of its environs. The streets are narrow and crooked, and have a gloomy and dilapidated appearance. In most parts of the city the fronts of the houses are built with mud, and pierced by a very few small grated windows. Interiorly they are of a quadrangular form, inclosing a court paved with marble, ornamented with beautiful trees and flowering bushes, and having copious fountains playing in the center.

Among the places most worthy of notice in Damascus are the bazaars. They are merely long streets covered with high woodwork, and lined with shops, stalls, magazines, and cafes.

In the midst of the bazaars is the Great Khan, said to be one of the most magnificent structures of its kind. It is an immense cupola supported on granite pillars and built in part of alternate layers of black and white marble. Its gate is one of the finest specimens of Moorish architecture to be seen in the world. In this building, and in 30 inferior khans, purchases and sales are daily conducted by the merchants who have their counting-houses near them. The principal mosque, a fine edifice, was destroyed by fire Oct. 14, 1893. The most interesting locality in the city is what is called "Straight Street," mentioned in connection with the conversion of the apostle Paul. It is the most important and capacious street in Damascus. The house of Judas, also, to which Ananias went, is still pointed out, as well as that of Ananias himself.

Damascus was formerly a great emporium of trade between Europe and the East. It is one of the holy cities, and here the pilgrims assemble on their journey to, and separate on their return from Mecca. Till a very recent period no Christian could walk the streets without incurring the risk of being insulted and probably maltreated by its fanatical population.

Damascus continues to be the most thoroughly Oriental city in all its features and characteristics of any city in existence. Of its origin nothing certain is known. There is, however, abundant evidence of its great antiquity, as it is mentioned in Gen. xiv: 15, as existing 1,913 years B. C. and appears even then to have been a place of note. A railway has been constructed from Beyrout, as also one running from Damascus to the Hauran. Pop. (est. for 1903) 225,000, of whom perhaps 25,000 are Christians.

Damascus Blade, a sword originally manufactured at Damascus and celebrated for the excellence of the quality of its steel.

Damask, a rich silk stuff originally made at Damascus. It has raised figures in various patterns, upon a white or colored ground. The work was probably of the nature of embroidery in the first place, but the figures were afterward exhibited on the surface by a peculiar arrangement of the loom.

Also a woven fabric of linen, extensively used for table-cloths, fine toweling, napkins, etc.

Damaskeen, or **Damasken,** to ornament one metal by another by inlaying or incrustation.

Dames of the Revolution, an American society organized in 1896, and composed of women above the age of 18 years, who are descended in their own right from an ancestor who assisted in establishing American inlependence during the War of the Revolution.

Damianists, a religious sect, disciples of Damian, Bishop of Alexandria, in the 6th century.

Damien, Father, (JOSEPH DAMIEN), a Belgian priest; born in Louvain, Jan. 3, 1841; in 1873 devoted himself to the awful duties of spiritual guide to the lepers confined o the Hawaiian island of Molokai. Sent on a mission to Honolulu, where on learning the neglected state of the epers, he volunteered to establish himself among them; and from 1877 onward became physician of their souls and bodies. In 1885 the malady appeared in him; yet he continued unabated his heroic labors till near his leath, April 10, 1889.

Damietta, a town of Lower Egypt, on the right bank of the chief E. nouth of the Nile, about 8 miles from ts mouth. It is the terminus of a ranch railway from Cairo. The camric known as dimity received its name rom Damietta, where it was first nanufactured. Pop. 31,515. The existing town was erected after 1251, out, prior to that, a city of the same name (more anciently Tamiathis) tood more to the S.

Damocles, a sycophant at the ourt of Dionysius of Syracuse in the th century B. C. When he was one lay extolling the happy condition of rinces, the tyrant invited him to a umptuous entertainment, but caused naked sword to be suspended over is head by a single hair; a sufficiently ignificant symbol of the fear in which yrants may live.

Damon, a Pythagorean philosopher, memorable for his friendship vith Pythias, or Phintias. Dionysius of Syracuse having condemned Damon o death, he obtained leave of absence o go home and settle his affairs, ythias pledging himself to endure the unishment in his stead if he did not eturn at the appointed time. Damon vas punctual; and this instance of riendship so pleased the king that he ardoned him, and begged, but in vain, o be admitted to their friendship.

Dampier, William, an English avigator; born in Somersetshire, in 652. During many years of active ervice in privateers and trading-vessels, he several times visited the South seas. He died in 1712, but the exact time is not known.

Damrosch, Leopold, a German musician; born in Posen, Prussia, Oct. 22, 1832; graduated from the University of Berlin, and began the practice of medicine; but his love for music predominated, and he gave up his profession and started on a tour as violinist. He met with great success. Coming to the United States, he was made leader of the Arion Society in New York, and subsequently founded the Oratorio and Symphony societies of that city. In 1881 Dr. Damrosch conducted, in the Seventh Regiment Armory, the finest musical festival ever held in New York. Died Feb. 15, 1885.

Damrosch, Walter, a German musician; born in Breslau, Prussia, in 1862; son of Dr. Leopold Damrosch. He has been a citizen of the United States since 1871. He inherited the musical talent of his father, and succeeded him in his enterprises. He married in 1890 Miss Margaret, daughter of James G. Blaine.

Damson, a variety of the common plum from Damascus.

Dan, one of the sons of Jacob by his concubine Bilhah. At the time of the exodus the Danites numbered 62,700 adult males, being then the second tribe in point of numbers. Samson was a member of this tribe.

Dana, Charles Anderson, an American journalist; born in Hinsdale, N. H., Aug. 8, 1819. He entered Harvard in 1839, but did not graduate. From 1844 to 1847 he edited "The Harbinger." In 1847 he became managing editor of New York "Tribune" with which he remained until 1861. From 1862 to 1865 he was in the service of the United States government, during the last two years as Assistant Secretary of War under President Lincoln. About the beginning of 1866 he became editor of the Chicago "Republican," a daily paper. In 1867 Mr. Dana, with several associates, purchased the New York Sun, which achieved great success under his editorship. He died Oct. 17, 1897.

Dana, Francis, an American jurist; born in Charlestown, Mass., in 1743; graduated at Harvard, and admitted to the bar. In 1775 he was sent to Europe on a confidential mission to Benjamin Franklin. He returned the next year and reported to General Washington that the colonies need expect nothing of Great Britain. In 1777 he was elected a member of the Congress that formed the Confederation, and filled various offices during the Revolutionary War. In 1781 he was made minister to Russia, and after his return was elected to Congress. In November, 1791, he was appointed Chief-justice of Massachusetts. He spent his declining years in retirement, and died April 25, 1811.

Dana, James Dwight, an American scientist; born in Utica, N. Y., Feb. 12, 1813. His researches into geology made him famous. He died in New Haven, April 14, 1895.

Dana, Richard Henry, the Elder, an American poet and essayist; born in Cambridge, Mass., Nov. 15, 1787. He studied at Harvard College, and was admitted to the Massachusetts bar. He was connected with the "North American Review" from its commencement, and his earliest writings first appeared in that periodical. He died Feb. 2, 1879.

Dana, Richard Henry, Jr., an American lawyer and author; born in Cambridge, Mass., Aug. 1, 1815. He entered Harvard College, but being compelled by an affection of the eyes to suspend his studies, made a voyage to California as a common sailor. Returning to college he completed his law course, and was admitted to the Boston bar, soon securing a large number of admiralty cases. In 1859–1860 he made a voyage round the world, visiting the Sandwich Islands, China, Japan, Ceylon, India, and Egypt. In 1861 he was appointed United States attorney for Massachusetts, and was counsel for the United States in the proceedings against Jefferson Davis for treason, in 1867–1868. He died in Rome, Italy, Jan. 7, 1882.

Danaides, the 50 daughters of Danaus, King of Argos. Ægyptus, King of Egypt, their uncle, who had 50 sons, desired them to marry their cousins, but the Danaides, warned by an oracle, opposed this marriage. Ægyptus sent his sons to Argos, backed by a powerful army, in order to enforce his wishes. Danaus, being too weak to resist, consented to the marriage, but concerted with his daughters that they should kill their husbands on the night of their nuptials. This horrible project was executed, Lynceus alone escaping through the mercy of his bride, Hypermnestra. In order to punish these murderous wives, Jupiter cast them into Tartarus, and condemned them to fill eternally with water a vessel full of holes.

Danakil, the Arabic and general name for the numerous nomad and fisher tribes inhabiting the coast of N. E. Africa. They belong to the Ethiopic Hamites.

Danbury, a city and one of the county-seats of Fairfield Co., Conn.; 62 miles N. E. of New York. It is the greatest hat-making city in the United States, with nearly 30 concerns in operation. In 1776 the place was made a depository for army stores, and when General Tryon, the Britsh governor of New York, was informed of the fact he headed a force of over 2,000 men, landed at Norwalk, marched immediately upon Danbury, and set fire to the town. Pop. (1900) 16,537.

Dance of Death, an allegorical representation of the power of death over all ages and ranks.

Dancing, a form of exercise or amusement in which one or more persons make a series of graceful movements in measured steps in accord with music. The art of dancing dates back to the early Egyptians, who ascribe that invention to their god Thoth. Among the ancient Jews, Miriam danced to a sound of trumpets, itself an act of worship, and David danced in procession before the Ark of God. Religious processions went with song and dance to the temples; the Cretan chorus moving in measured pace sang hymns to the Greek god Apollo, and one of the Muses (Terpsichore) was the especial patroness of the art.

Dancing Mania, a habit accompanied by aberration of mind and distortions of the body, very prevalent in Germany in 1374, and in the 16th century in Italy.

Dandelion, a common and well-known plant. The blanched leaves have been recommended as a winter salad, and the young leaves are a favorite "greens" in New England.

Dandolo, a patrician family of Venice, which traced its origin to the Roman era.

DANDOLO, ENRICO, Doge of Venice, to which high office he was chosen in 1192, when in his 87th year. He carried on the war with the Pisans and closed it by an advantageous peace. In 1201 the Crusaders applied to him for assistance, and on their promise to reduce the town of Zara, which had revolted, he agreed to help them. He accordingly undertook with them, in 1203, the siege of Constantinople, at which he greatly distinguished himself, and was the first who leaped on shore. He was created despot of Rumania, and died 1203, at the age of 97.

Danegelt, or **Danegeld,** originally a tax or tribute in England for the purpose of raising and maintaining forces to protect the coasts from the plundering attacks of the Danes.

Danehower, John Wilson, an American Arctic explorer; born in Chicago, Ill., Sept. 30, 1849. He graduated at the United States Naval Academy in 1870, and took part in a surveying expedition to the Northern Pacific. In 1873 he was at Honolulu, helping to quell an insurrection; and was one of the officers in charge of the "Vandalia" during General Grant's visit to Egypt and the Levant. He joined the "Jeannette" expedition for the Arctic Ocean. The vessel was lost in the ice and the crew after dragging their boats over the frozen deep for 95 days, reached the open sea. Lieutenant Danenhower arrived in the United States in June, 1882. He wrote "'The Narrative of the Jeannette." He died in Annapolis, April 20, 1887.

Danes, the natives of Denmark. The first mention of them was early in the 6th century, when they were living on the W. coast of the Cimbrian peninsula, whither they had gone from Scandinavia. Their literature dates from the 13th century, but ancient runic inscriptions in the old Danish language have been found which date from the Viking age (700–1050).

Dane, The Great, one of the breed of large close-haired dogs, originating in Denmark.

Daniel, the prophet, a contemporary of Ezekiel; was born of a distinguished Hebrew family. In his youth, 605 B. C., he was carried captive to Babylon, and educated in the Babylonish court for the service of King Nebuchadnezzar. Thrown into the lion's den for conscientiously refusing to obey the king, he was miraculously preserved, and finally made prime-minister in the court of the Persian King Darius. He ranks with what are called the "greater prophets." The book of the Old Testament which bears his name is divided into a historical and a prophetic part. Modern criticism generally regards it as written during the oppression of the Jews under Antiochus, about 170 B. C. It is partly in Chaldee.

GREAT DANE.

Daniels, William Haven, an American prose-writer; born in Franklin, Mass., May 18, 1836.

Danish West Indies. See WEST INDIES, DANISH.

Danite, a member of a band existing among the Mormons, for the purpose of dealing, as avengers of blood, with the "Gentiles."

Dannecker, Johann Heinrich von, a German sculptor; born in Waldenbuch, Oct. 15, 1758. His parents were in the humblest circumstances, but he received a good education at the military academy at Ludwigsburg. The Duke of Wurtemberg appointed him Professor of Sculpture in the Academy of Stuttgart, in which city he resided till his death, Dec. 8, 1841.

Dannemora, a village on a lake of the same name, 24 miles N. N. E. of Upsala, in Sweden, celebrated for its iron-mines, the second richest in Sweden, which produce the finest iron in the world. Also a town of New York State, where a state prison is situated. Here on Oct. 1, 1903, occurred the execution of three brothers named Van Wormer, ranging from twenty to twenty-six years of age for the murder of an uncle whom they shot in his home.

D'Annunzio, Gabriele, an Italian novelist and poet; born at sea in 1864. He studied law in Pisa, but in 1885 took up literature. He wrote "Italy" and other poems, besides novels of pessimist tendency. "The Triumph of Death," published 1895, won him international fame. In 1899 he was elected to the Italian Chamber of Deputies.

Dante, (a contraction of Durante), **Alighieri,** an Italian poet; born in Florence about the end of May, 1265. He died Sept. 13 or 14, 1321. He is famous as the author of "The Divina Commedia," containing awful word pictures of hell.

Danton, George Jacques, a French revolutionist; born in Arcis-sur-Aube Oct. 26, 1759. He played a very important part during the first years of the French Revolution. Robespierre hated him, and succeeded in bringing about his downfall. On April 5, 1794, the revolutionary tribunal condemned him to death as an accomplice in a conspiracy for the restoration of monarchy, and confiscated his large property. The same day he mounted the fatal car with courage and without resistance.

Danube, a celebrated river of Europe, originates in two small streams rising in the Schwarzwald, or Black Forest, in Baden, and uniting at Donaueschen. The direct distance from source to mouth of the Danube is about 1,000 miles, and its total length, including windings, about 1,640 miles. The Danube is navigable for steamers up the Regensburg (Ratisbon), nearly 1,500 miles from its mouth.

Danube Navigation Commission, an international commission, constituted in 1856, when at the Peace of Paris the navigation of the river was declared free to all nations, and was composed of delegates of all the great powers, to whom a representative of Rumania has been added since 1878. It exercises almost sovereign power on the mouths of the Danube, where it has conducted great engineering works; it has its own flag, uniform, and revenue, and has raised loans, made laws, and maintained its own small army of police.

Danville, a city and county-seat of Pittsylvania Co., Va., on the Dan river, 140 miles S. W. of Richmond; is the seat of Randolph-Macon Institute, Roanoke Female College, Danville Female College, and Danville Military Institute, and has good water-power. It is the center of the fine yellow tobacco section, and 30,000,000 pounds of leaf-tobacco are sold annually. Pop. (1900) 16,520. It is mentioned frequently in the history of the Civil War.

Danzig, a fortified town and port, Prussia, capital of the Province of West Prussia, 253 miles N. E. of Berlin, on the left bank of the W. arm of the Vistula, about three miles above its mouth in the Baltic. It is one of the most important seaports in the Prussian monarchy. Pop. (1900) 140,539.

Da Ponte, Lorenz, an Italian dramatist and author; born in Venice, March 10, 1749. He came to America in 1805, and in 1828 was Professor of Italian in Columbia College. He died in New York, Aug. 17, 1838.

Darboy, Georges, Archbishop of Paris; born Jan. 16, 1813, in Fayl-Billot, in Haute-Marne. He was educated at the seminary of Langres, and after his ordination as priest was appointed a professor there. In 1845 he went to Paris, where his reputation as translator of Dionysius the Areopagite had preceded him. In 1854 he was made prothonotary apostolic, in 1859 Bishop of Nancy, and in 1863 Archbishop of Paris. Arrested as a hostage by the Communists, April 4, 1871, he was shot in the court of the prison of La Roquette on May 24.

Dardanelles, (the ancient Hellespont), a narrow channel within the Turkish dominions, which connects the Sea of Marmora with the Grecian Archipelago, and at this particular point separates Europe from Asia. It stretches N. E. and S. W., and is about 40 miles in length, varying in breadth from 1 to 4 miles. The Asiatic side is seen gradually rising from the sea to the range of Mount Ida, and exhibits the appearance of a fine and fertile country. The European side is in general steep and rugged, but in many parts densely peopled and highly cultivated; while its various inlets form secure harbors for vessels of every size. The modern name of this strait is derived from the castles, called the Dardanelles, built on its banks at its S. W. entrance; its ancient name, Hellespont, from Helle, daughter of Athamas, King of Thebes, who was fabled to have been drowned in it. It is also renowned as the scene of the death of Leander, who, it is said, used to swim across from Abydos on the Asiatic side, at the narrowest part of the strait to visit Hero of Sestos on the European side, a feat also performed by Lord Byron, who achieved it in one hour and ten minutes. Nearest the Archipelago lie the two castles called the new castles. About 12 miles farther to the N. E. lie the old castles, built by Mohammed II. immediately after the conquest of Constantinople. Four coast batteries have been built since 1867 somewhat farther to the N. On July 20, 1770, when the squadron of the Russian Admiral, Elphinstone, consisting of three ships of the line and four frigates, in pursuit of two Turkish ships of the line appeared before the first castles, the Turkish batteries, from want of ammunition, were obliged to cease firing after one discharge, and Elphinstone sailed by without receiving more than a single shot; and in 1807 Admiral Duckworth, with eight ships of the line and four frigates, effected a passage through the Dardanelles without loss. In 1854, during the Crimean War, the castles and other defenses of Constantinople were put in repair. It had long been recognized that the Turks had a right to prevent any foreign ship of war from passing the Dardanelles, and in 1841 a treaty was signed between the five great European powers and the Porte in which it was laid down that this was not to be permitted. By the Berlin treaty of 1878 the duty was again imposed. The Sultan recently permitted a Russian war vessel to pass the Dardanelles, England alone protesting.

Dardistan, the name given to a region of Central Asia, bordering on Baltistan, the N. W. portion of Cashmere. The country, which consists of lofty mountains and high-lying valleys, is little known, and its limits are variously given.

Darfur, a province of Central Africa, one of the divisions of the Sudan or "Land of the Blacks," situated approximately in 10° to 16° N. lat., and in 22° to 28° E. lon.; but its limits are not clearly defined. The Fulahs are an intelligent, well-built race, and have long been Mohammedans; their numbers are variously estimated at from 3,000,000 to 4,000,000.

Daric, a gold coin current in Persia, Asia Minor, etc. It was of the value of about $5.29, and weighed about 130 grains.

Darien, Gulf of, a gulf of the Caribbean Sea at the N. extremity of South America, between the Isthmus of Panama and the mainland.

Darien, Isthmus of, often used as synonymous with the Isthmus of Panama, but more strictly applied to the neck of land between the Gulf of Darien and the Pacific.

Darien Scheme, a celebrated financial project, conceived and set afloat by William Paterson, a Scotchman, toward the close of the 17th century. He was the first projector of the Bank of England, but was disappointed of his just recompense. His next scheme was one of magnificent proportions. He proposed to form an emporium on each side of the Isthmus of Darien or Panama for the trade of the opposite continents. The settlement thus formed would become the entrepot for an immense exchange between the manufactures of Europe and the produce of South America and Asia. Paterson had designed to limit the benefits of the scheme to Scotland mainly, but had to seek help in London, where the subscriptions soon ran up to $1,500,000.

Alarm was soon excited among the English merchants at the gigantic Scotch scheme, and the English subscriptions were withdrawn. Scotland, indignant at this treatment, subscribed at once and with great enthusiasm $2,000,000. Little more than the half, however, was paid up. In 1698 five large vessels laden with stores, etc., and with 1,200 intending colonists, sailed for the Isthmus of Darien. The settlement formed a suitable position, and the colonists fortified a secure and capacious harbor; but nothing else had been rightly calculated.

To add to their difficulties the colonists were attacked by the Spaniards and all commerce forbidden with them. For eight months the colony bore up, but at the end of that time the survivors were compelled by disease and famine to abandon their settlement and return to Europe. Two of the ships were lost on the way home, and only about 30, including Paterson, reached Scotland. It is claimed, with some probability, that the English government was jealous of the share of Scotland in the undertaking.

Darius I., King of Persia; born in 548 B. C. He was a great conqueror, but failed disastrously in his wars against Greece. Egypt revolted against him. He died in 485, before the Egyption revolt (487) had been subdued, and in the midst of his preparations for a third expedition against the Athenians, and was succeeded by Xerxes.

Darius II., King of Persia, successor of Xerxes; died 405 B. C.

Darius III., surnamed CODOMANNUS, son of Arsanes and Sysigambis, and great-grandson of Darius II., was the 12th and last King of Persia. He ascended the throne 336 B. C. Alexander of Macedon attacked the country, and the army which was sent against him by Darius was totally routed on the banks of the Granicus, in Asia Minor. Darius then advanced, with 400,000 soldiers, to the plains of Mesopotamia, and was a second time totally routed near the Issus, 333 B. C.

Alexander subjected Egypt, and Darius found himself once more obliged to collect an army. He led his forces from Babylon to Nineveh, while Alexander was encamped on the banks of the Tigris. The two armies met between Arbela and Gaugamela, and after a bloody engagement Darius was compelled to seek safety in flight (331 B. C.). Alexander took possession of his capital, Susa, captured Persepolis, and reduced all Persia. Darius meanwhile arrived at Ecbatana, in Media, where he had another army of 30,000 men. With these he wished to march against the conqueror, but a conspiracy frustrated his plan. The traitors soon after took possession of his person, and carried him in chains to Bactria. Here he refused to accompany them any farther, and they transfixed him with their javelins, and left him to his fate. Scarcely had Darius expired, when Alexander came up. He melted into tears at the sight of the corpse, caused it to be embalmed, and deposited by the side of the other Persian monarchs. The date of these events was 330 B. C.

Darjeeling, or **Darjiling**, a district of India, in the extreme N. of the lieutenant-governorship of Bengal; division of Cooch-Behar; area, 1,234 square miles. Pop. 155,179. DARJEELING, the chief town in the district, is a sanatory station for British troops. Pop. 7,018.

Dark Ages, The, a period supposed to extend from the fall of the Roman empire, A. D. 475, to the revival of literature in the 12th century, but often given a much more extended, and fully justifiable meaning.

Dark and Bloody Ground, a name frequently applied to the State of Kentucky. It is said to be a translation of the Indian words "Kain-tuk-ee," though some authorities claim that they signify "At the head of the river." The epithet was originally bestowed because the region was the scene of many sanguinary conflicts between the red men of the Northern and Southern tribes. Later the constant feuds between white settlers and the aborigines rendered the phrase peculiarly appropriate to this locality.

Dark Continent, The, Africa, in allusion to the almost total ignorance concerning the people and geography of its interior which until quite recently was prevalent in America and Europe.

Darley, Felix Octavius Carr, an American artist; born in Philadelphia, June 23, 1822. His illustrations of literary masterpieces gave pleasure to thousands, and made him famous. He died in Claymont, Del., March 27, 1888.

Darling, Flora (Adams), an American novelist; born in New Hampshire in 1840.

Darling, Grace, an English heroine; born in the Longstone Lighthouse (Farne Islands, coast of Northumberland), of which her father was keeper, Nov. 24, 1815. In 1838 the steamer "Forfarshire," with 41 passengers on board besides her crew, became disabled off the Farne Islands during a storm, and was thrown on a rock, where she broke in two, part of the crew and passengers being left clinging to the wreck. Next morning William Darling descried them from Longstone, about a mile distant, but he shrank from attempting to reach the wreck through a boiling sea in a boat. His daughter Grace, however, implored him to make the attempt and let her accompany him. At last he consented, and father and daughter each taking an oar, they reached the wreck and succeeded in rescuing nine sufferers. The news of the heroic deed soon spread, and the brave girl received testimonials from all quarters. A purse of $3,500 was publicly subscribed and presented to her. Four years afterward she died of consumption, Oct. 20, 1842.

Darlington, William, an American botanist; born in Birmingham, Pa., April 28, 1782. He was a soldier in the War of 1812, and a member of Congress from 1815 to 1817 and 1819 to 1823. He died in Manchester, Pa., April 23, 1863.

Darmesteter, Agnes Mary Frances (Robinson), an English poetess; born in Leamington, 1857. She has attained great proficiency in Greek studies, her verse showing the influence of Hellenic literature. In 1888 she married James Darmesteter, the Orientalist.

Darmesteter, James, a French Orientalist; born in Chateau-Salins, March 28, 1849; died Oct. 19, 1894.

Darmstadt, a town in Germany; capital of the Grand-duchy of Hesse, in a sandy plain, on the Darm, 15 miles S. of Frankfort. Pop. (1900) 72,381.

Darnley, Henry Stuart, Lord, son of the Earl of Lennox and Lady Margaret Douglas, a niece of Henry VIII., and by her first marriage queen of James IV.; born 1541. In 1565 he was married to Mary Queen of Scots. It was an unfortunate match. After the birth of a son, subsequently James VI., Darnley was seized at Glasgow with smallpox, from which he had barely recovered when Mary visited him, and had him conveyed to an isolated house called Kirk of Field, close to the Edinburgh city walls. This dwelling, which belonged to a retainer of Bothwell, the rapidly rising favorite, was blown into the air with gunpowder, Feb. 10, 1567. The dead bodies of the king and his page were found in a field at a distance of 80 yards from the house, quite free from any mark which such an explosion would cause. Strong circumstantial evidence points to Bothwell as the murderer.

Dart, a javelin, a short missile weapon thrown by the hand, or impelled by the breath through a tube. The weapon is always very simple in its construction, and is usually from 3 to 5 feet long.

Dartmouth College, an educational (non-sect.) institution in Hanover, N. H.; founded in 1769, and from which many eminent men have been graduated.

Darton, Nelson Horatio, an American geologist; born in Brooklyn, N. Y., Dec. 17, 1865. Since 1890 he has been connected with the United States Geological Survey.

D'Arusmont, Madame Frances, maiden name FANNY WRIGHT, an American philanthropist and author; born in Dundee, Scotland, Sept. 6, 1795. She visited this country several times, and in 1825 made an unsuccessful attempt to establish a settlement for the elevation of the negro at Memphis, Tenn. In later years she lectured on social, religious, and political questions.

Darwin, Charles Robert, an English naturalist; born in Shrewsbury, Feb. 12, 1809; was the son of Dr. Robert Darwin and grandson of Dr. Erasmus Darwin. He was educated at Shrewsbury School, and at the universities of Edinburgh and Cambridge. He early devoted himself to the study of natural history. In 1839 he married his cousin, Emma Wedgwood, and henceforth spent the life of a quiet country gentleman, engrossed in scientific pursuits — experimenting, observing, recording, reflecting, and generalizing. In 1859 his name attained its great celebrity by the publication of "The Origin of Species by Means of Natural Selection." This work, scouted and derided though it was at first in certain quarters, may be said to have worked nothing less than a revolution in biological science. In it for the first time was given a full exposition of the theory of evolution as applied to plants and animals, the origin of species being explained on the hypothesis of natural selection. The rest of his works are largely based on the material he had accumulated for the elaboration of this great theory. He died April 19, 1882, and was buried in Westminster Abbey.

Darwinian Theory, the explanation of the working of natural selection in effecting specific changes in plants and animals. "Darwinism" must not be confused with "Evolution." Darwinism is restricted to one particular interpretation of the mechanism of the universe, and is essentially stated in Darwin's great work, "The Origin of Species by Means of Natural Selection." Darwin points out that the theory of evolution by natural selection is no more inimical to religion than is that of gravitation, to which the same objection was raised.

Dasent, Sir George, an English philologist and novelist; born on the island of St. Vincent, 1818. He was for a while one of the editors of the London "Times," and was one of the Civil Service Commissioners. He is eminent as a scholar in the Norse languages, particularly Icelandic. He died June 11, 1896.

Dasyure, the brush-tailed opossums a genus of marsupial animals. They are natives of Australia. The name is derived from the tails being hairy, in which they differ from the opossums of America.

Date, any given, fixed, or settled time; the time when any event happened; period; era; age; epoch, as, the date of the Christian era, the date of a historical occurrence, etc. Also, that addition to a writing which specifies the year, month, and day when it was given or executed; the number which marks the time when any writing, instrument, coin, picture, etc., was executed.

Date Line, an arbitrary line drawn on a map from N. to S., on the one side of which it is today and on the other tomorrow, even in places not a mile apart. When ships cross this line they drop or repeat a day. The international date line describes the following course: Starting at the North Pole it passes through Bering Strait, then slants to the W. to clear the long horn formed by the Aleutian chain of islands and give them the same day as the United States, to which they belong. This accomplished, it returns to the 180th meridian and drops S. into the tropics, keeping far to the E. of the Japanese group and the Philippines till it approaches the latitude of the Fiji Islands. As these and some of the neighboring groups belong to Great Britain and do business chiefly with her Australian colonies, the date line here makes a sudden swerve to the E., so as not to embarrass the local commerce with a change of day.

Date Palm, a genus of palms, the most important species of which is the common date palm, the palm tree of Scripture, a native of the N. half of Africa, the S. W. of Asia, and some parts of India, and of which the cultivation is no less wide, and still extending. Some parts of China produce large crops. The stem, which is straight and simple, reaches a height of 30 to 60 feet, and bears a head of 40 to 80 glaucous pinnated leaves, 8 to 10 feet long, and a number of branching spadices, each of which on the female tree bears 180 to 200 fruits. A bunch of dates weighs 20 or 25 pounds, so that an average year's crop may be reckoned at 300 to 600 pounds per tree, and the yield per acre at about 12 times that of corn.

This is one of the most important and useful of all the palms. In Egypt, and generally in North Africa, Persia, and Arabia, dates form the principal food, and date palms the principal wealth of the people.

Some derive the origin of the colonnade pillar in architecture to the regular mode of the planting of the palm tree and the use of its stem in building, while in symbolic interest the palm tree stands second to no other plant. The symbol of beauty and of victory alike to Hebrews and Hellenes from the earliest times, it passed readily to the suggestion of victory over death and glorious immortality; hence the habit of representing angels and the blessed with palms in their hands. It was largely used also for decoration of festivals, and for strewing in processions. Christ's triumphal entry into Jersualem is still commemorated on Palm Sunday.

DATE PALM.

Date Plum. The American date plum, or persimmon attains a height of 50 or 60 feet; the fruit is nearly round, about an inch in diameter, is very austere, but edible after being frosted. The Chinese date plum is cultivated for the sake of its fruit, which is about the size of a small apple, and is made into a preserve. The European date plum is a low-growing tree, native of the S. of Europe. It produces a small fruit, the supposed lotus of the ancients.

D'Aubigne, Jean Henri Merle, a celebrated Swiss Protestant Church historian; born near Geneva, Aug. 16, 1794. He was Professor of Historical Theology at Geneva (1831-1872). His great work was "History of the Reformation" (1835-1853), with its continuation, "History of the Reformation in the Time of Calvin" (1863-1876). He died in Geneva, Oct. 24, 1872.

Daubigny, Charles Francois, a French landscape painter and etcher; born in Paris in 1817; died in Paris, Feb. 19, 1878.

Daudet, Alphonse, a French novelist; born in Nimes, May 13, 1840; died in Paris, Dec. 16, 1897.

Daudet, Ernest, a French novelist; brother of Alphonse Daudet; born in Nimes, May 31, 1837.

Daughter of the Confederacy. See DAVIS, VARINA ANNE JEFFERSON.

Daughters of the American Revolution, a society composed of women who are descendants of ancestors who "with unfailing loyalty rendered material aid to the cause of independence as a recognized patriot, as soldier or sailor, or as a civil officer in one of the several colonies or States." It was organized in Washington, D. C., Oct. 11, 1890.

Daughters of the Confederacy, an association composed of the widows, wives, mothers, sisters, and lineal female descendants of men who served honorably in the army and navy of the Southern States, or who gave personal services to the Confederate cause. It was organized at Nashville, Tenn., Sept. 10, 1894.

Daughters of the Holland Dames, a colonial society of women, the official title being "The Daughters of Holland Dames, Descendants of the Ancient and Honorable Families of New York," was incorporated for the purpose of erecting a memorial to commemorate the early Dutch period of our colonial history, and to preserve and collect historical documents relating to the same.

Daughters of the King, a Protestant Episcopal order of women (not to be confused with the King's Daughters), organized in 1885. The aim of the society is to bring young women within the influence of the Church and to coöperate with the rectors of parishes to that end.

Daughters of the Revolution, a patriotic society of women in the United States, organized in 1891. Eligibility to membership is restricted to "women who are lineal descendants of an ancestor who was a military or naval or marine officer, soldier, sailor, or marine, in actual service under the authority of any of the 13 Colonies or States, or of the Continental Congress, and remained always loyal to such authority, or descendants of one who signed the Declaration of Independence, or of one who as a member of the Continental Congress or of the Congress of any of the Colonies or States, or as an official appointed by or under the authority of any such epresentative bodies, actually assisted in the establishment of American independence by service rendered during the War of the Revolution, becoming thereby liable to conviction of treason against the government of Great Britain, but remaining always loyal to the authority of the Colonies or States."

D'Aumale. See AUMALE.

Daumer, Georg Friedrich, a German writer; born in Nuremberg in 1800. He died in Würzburg, Dec. 14, 1875.

Daumier, Henri, a French caricaturist; born in Marseilles in 1808; died in Valmondois, Feb. 10, 1879.

Dauphin, the title of the eldest son of the kings of France or of the heir apparent to the throne.

Davenant, William, an English poet and playwright; born at Oxford in February, 1606. A story was current in his lifetime that he was an illegitimate son of Shakespeare. He wrote many plays and poems, but none possessing any distinguished merit; he succeeded Ben Jonson as poet-laureate of England. He died April 7, 1668.

Davenport, Edward Loomis, an American actor; born in Boston, Mass., Nov. 15, 1814. He died in Canton, Pa., Sept. 1, 1877.

Davenport, Fanny Lily Gypsy, an American actress; born in London, April 10, 1850. Her first appearance on the stage was at the Howard Athenæum in Boston, under the management of her father, E. L. Davenport. She played in the theaters of all the large cities in the United States. She was married in 1879 to Edwin H. Price, but was divorced and married Melbourne McDowell, an actor of leading roles in her company. She died near Duxbury, Mass., Sept. 26, 1898.

Davenport, Homer Calvin, an American cartoonist; born in Silverton, Ore., March 8, 1867. He was bred on a farm in Oregon, having neither common school nor art education. Since 1896 he has been cartoonist for the New York "Journal," and since 1900 for the Chicago "American" as well. His cartoons have gained world-wide fame for originality and forcefulness.

Davenport, John, an American clergyman; born in Coventry, England, in 1597. He was one of the founders of New Haven, Conn. In 1660 he hid the regicides Goffe and Whalley from their pursuers. He died in Boston, March 15, 1670.

David, King and Prophet of Israel; born in Bethlehem, B. C. 1085; was the eighth and youngest son of Jesse of Bethlehem. He was keeping his father's flocks when he was selected and anointed by the prophet Samuel, at the age of 15, to succeed Saul. Having been brought to the court of Saul to soothe the melancholy of the king by his harp, he first signalized himself by slaying Goliath of Gath, a gigantic Philistine. He won the friendship of Jonathan, and the love of his daughter Michal, but at the same time drew upon himself the jealousy, and fury of the unhappy king, who repeatedly attempted to kill him. David fled into the wilderness, concealing himself in caverns. At the head of a band of outlaws and malcontents he baffled every attempt of

Saul to capture him. When Saul fell, David was acknowledged king by the tribe of Judah; but the other tribes placed Ishbosheth, the younger son of Saul, on the throne, occasioning a civil war. On the death of Ishbosheth, however, the contending parties united in submission to David, who reigned with great glory for 30 years. He took Jerusalem from the Jebusites, and gained considerable victories over the Philistines and other neighboring nations; but tarnished his glory by taking Bathsheba from Uriah, her husband, and putting him to death. He also suffered by causing the people to be numbered. A rebellion was excited against him by his son Absalom, which was quelled, and Absalom slain. When the news of this was brought to David, he lamented the untimely fall of his son in affecting terms. At the close of his life he abdicated in favor of his son Solomon. He died 1015 B. C.

The historical picture of David fully supports the tradition that "the sweet singer of Israel" was the greatest poet of his time, and the founder of the sublime religious lyric poetry of the Hebrews, though many of the Psalms are productions of the Davidic spirit more than of David's own pen.

David I., (often called St. David), King of Scotland; born about 1080; succeeded his brother, Alexander the Fierce, in 1124. He married Maud, grandniece of William the Conqueror; and was earl of Northumberland and Huntingdom when called to the Scottish throne. He died in 1153.

David II., King of Scotland, son of Robert Bruce; born in 1322; succeeded to the throne in 1329. On the death of his father he was acknowledged by the great part of the nation. Edward Baliol formed a party for the purpose of supporting his pretensions to the crown; he was backed by Edward III. of England. Battles were frequent, and at first Baliol was successful; but eventually David succeeded in driving him from Scotland. Still, however, the war was carried on with England with increasing rancor, till at length David was made prisoner at the battle of Neville's Cross (1346). After being detained in captivity for 11 years he was ransomed for 100,000 marks. He died in 1370.

David, Ferdinand, a German violinist; born in Hamburg, Jan. 19, 1810; pupil of Sphor; made his debut in 1824; leader of Gewandhaus Concerts, Leipsic, 1836. He died in Kloster, Switzerland, in 1873.

David, Gerhard, a Dutch painter; born at Oudewater, about 1450; died in Bruges in 1523.

David, Jacques Louis, founder of the modern French school of painting; born in Paris, Aug. 31, 1748. He went to Rome in 1774, and passed several years there painting several important pictures. In the Revolution he was a violent Jacobin and wholly devoted to Robespierre. Several of the scenes of the Revolution supplied subjects for his brush. He was appointed first painter to Napoleon about 1804; and after the second restoration of Louis XVIII. he was included in the decree which banished all regicides from France, when he retired to Brussels, where he died Dec. 29, 1825.

David, Pierre Jean, a French sculptor; born in Angers, March 12, 1789 (hence commonly called David d'Angers). He executed a great number of medallions, busts, and statues of celebrated persons of all countries, among whom we may mention Washington and Lafayette. He died in Paris, Jan. 5, 1856.

David, or **Dewi, St.,** the patron saint of Wales; first mentioned in the "Annales Cambriæ" (10th century) as having died in 601, Bishop of Moni Judeorum, or Menevia, afterward St. David's. He presided over two Welsh synods, at Brefi and at "Lucus Victoriæ."

Davidson, George, an American astronomer; born in Nottingham, England, May 9, 1825; came to the United States in 1832; graduated at the Central High School, Philadelphia, in 1845; and joined the United States Coast Survey. While in this service he was chief engineer of a party which surveyed a ship-canal route across the Isthmus of Darien. He also made a geographical survey of the coast of Alaska in 1867, and reported on its products, etc. In 1874 he had charge of the party which went from the United States to Japan to make observations on the transit of

Venus. From 1877–1884 he was Regent of the University of California, and for many years was President of the California Academy of Sciences. He retired from the Coast Survey, after 50 years of distinguished service, in 1895, and became Professor of Geography in the University of California.

Davidson, John, a Scotch poet, novelist, and miscellaneous writer; born in Barrhead, Renfrewshire, in 1857. He was at first a teacher, but in 1890 went to London and adopted the literary career.

Davidson, Lucretia Maria, an American poet; born in Plattsburg, N. Y., Sept. 27, 1808. She was remarkably precocious, and at the age of nine years wrote her first poem: "Epitaph on a Robin." She died in Plattsburg, Aug. 27, 1825.

Davidson, Margaret Miller, an American poet; sister of the above; born in Plattsburg, N. Y., March 26, 1823. She began to write at the age of six years. Her poems even surpass those of her sister in fervor of sentiment, and flight of imagination. They were published after her decease, with a memoir, written by Washington Irving, and met with warm applause. She died in Saratoga, N. Y., Nov. 25, 1838.

Davidson, Thomas, a Scottish-American philosopher and writer; born in Aberdeenshire, Oct. 25, 1840. He came to the United States in 1867, and was subsequently Professor of Classics in the St. Louis High School. In 1875 he settled in Cambridge, Mass. Later he traveled in Greece and Italy, where much of his literary work was perfected. He died in Montreal, Sept. 14, 1900.

Davidson College, an educational institution in Davidson, N. C.; founded in 1837, under the auspices of the Presbyterian Church.

Davies, Charles, an American mathematican; born in Washington, Litchfield co., Conn., Jan. 22, 1798. He was educated at the United States Military Academy and was appointed Professor of Mathematics there in 1828. He held the same post subsequently at Columbia College and in the University of New York. He died in Fishkill Landing, N. Y., Sept. 18, 1876.

Davies, Thomas Alfred, an American military officer and writer; born in Black Lake, St. Lawrence co., N. Y., Dec. 3, 1809; graduated from West Point in 1829; became a brevet Major-General of volunteers in the Civil War. He died in Black Lake, Aug. 19, 1899.

Davies, Thomas Frederick, an American clergyman; born in Fairfield, Conn., Aug. 31, 1831. He graduated at Yale in 1853 and at Berkeley Divinity School in 1856, being ordained a priest of the Protestant Episcopal Church in 1857, and since 1889 has been Bishop of Michigan.

Daviess, Joseph Hamilton, an American lawyer; born in Belford co., Va., March 4, 1774. He was famed for his eccentricities and was commonly known as "Jo" Daviess. He was appointed United States District Attorney in Kentucky and in that capacity prosecuted Aaron Burr for treason. Jo Daviess county in Illinois was named in his honor. He was killed at the battle of Tippecanoe, Nov. 7, 1811.

Davis, Andrew Jackson, an American spiritualist and author; born in Orange co., N. Y., Aug. 11, 1826. He is a resident of Boston, Mass.

Davis, Charles Henry, an American mathematican; born in Boston, Jan. 16, 1807. He entered the United States navy in 1823, and was commissioned commander in 1854. He made several coast-surveys, partly in conjunction with Prof. A. D. Bache, and partly with others. He died in Washington, D. C., Feb. 18, 1877.

Davis, Cushman Kellogg, an American legislator; born in Henderson, N. Y., June 16, 1838. He graduated at the University of Michigan in 1857; was admitted to the bar, but enlisted in the Union army in 1861. He began the practice of law in St. Paul, was chosen to the Minnesota Legislature, became United States district attorney, governor, and United States Senator. He was a Republican, and a member of the Peace Commission which negotiated the treaty between Spain and the United States in 1898. He was for several years chairman of the Senate Committee on Foreign Relations, and reported the resolution which practically declared war against Spain. He died in St. Paul, Minn., Nov. 27, 1900.

Davis, David, an American jurist; born in Cecil co., Md., March 9, 1815. He graduated at Kenyon College and settled in Illinois as a lawyer. He was elected to the Legislature and served as a State Circuit Judge; he was appointed an Associate Justice of the Supreme Court of the United States. He resigned in 1877 to enter the United States Senate, of which he became president pro tem. in 1881, and retired in 1883. He died in Bloomington, Ill., June 26, 1886.

Davis, Edwin Hamilton, an American archæologist; born in Ross co., O., Jan. 22, 1811. He was author of "Ancient Monuments of the Mississippi Valley." He died in New York city, May 15, 1888.

Davis, Henry Winter, an American statesman and orator; born in Annapolis, Md., Aug. 16, 1817. He was a member of Congress for three terms, and took a leading part in advocating emancipation and loyalty to the Union. He died in Baltimore, Md., Dec. 30, 1865.

Davis, Jefferson, an American statesman; born in Abbeville, Christian co., Ky., June 3, 1808. When he was three years old, his father removed with his family to Wilkinson co., Miss. He received an academical education and entered Transylvania University, Lexington, Ky., in 1822, which he left in 1824 to enter the United States Military Academy, from which he was graduated in 1828. He was appointed a second lieutenant of infantry, and served on the Northwestern frontier during the Black Hawk War of 1831–1832. In 1831 he was promoted to first lieutenant of dragoons for gallantry in action, and was employed in operations against the Pawnees, Comanches, and other Indian tribes. In June, 1835, he resigned his commission, and retired to a cotton plantation in Mississippi. He continued in retirement until 1843, when he began to take an interest in politics upon the Democratic side; and in 1844 was chosen a presidential elector. In 1845 he was elected a Representative to Congress; but resigned in 1846, having been elected colonel of the First Mississippi Volunteer Regiment of rifles, and served in the Mexican War, greatly distinguishing himself at Monterey and Buena Vista, and being severely wounded in the latter battle. He was appointed a Brigadier-General of volunteers by President Polk in 1847, but declined the commission on the grounds that, by the Constitution, the militia appointments were reserved to the States, and that such appointments by the President were in violation of State rights.

The same year he was chosen to fill a vacancy in the United States Senate, and was reëlected by acclamation in 1850 for a full term. In 1853 he was appointed Secretary of War by President Pierce, and in 1857, was again elected to the United States Senate, when he took a prominent place among the Southern leaders, and was among the most determined of them all in his assertions of the rights of the States under the Constitution, and also of the right of secession. On Jan. 21, 1861, he took his leave of the Senate in a speech in which he gave his opinion that, by the secession of his State, his connection with that body was terminated, and reaffirmed the doctrine of the right of secession. The Confederate Congress, at Montgomery, Ala., chose him President, under the Provisional Constitution, on Feb. 9, 1861, and he accepted the office on the 16th in a brief address, in which he expressed his desire for the maintenance of peaceful relations with the States which remained in the Union. He asserted that all that the seceeding States desired was to be "let alone," but announced that, if war should be forced upon them, they would make the enemies of the South "smell Southern powder and feel Southern steel."

On April 17, two days after the first proclamation of President Lincoln, he responded by a proclamation authorizing privateering; and on Aug. 14 issued a second one, warning all persons of 14 years and upward, owing allegiance to the United States, to leave the Confederacy within 40 days, or be treated as alien enemies. On Nov. 6 he was chosen permanent President, and was inaugurated Feb. 22, 1862. On May 21 he approved an act in answer to one enacted by the United States Government, providing that all persons owing debts to parties in the North should pay the same into the Confederate treasury. Mr. Davis continued to be President of the Southern Confederacy until his capture at Irwinsville, Ga., May 10, 1865, having left Richmond a few hours before General Lee withdrew his troops, and after General Lee's surrender, when he was endeavoring to reach the Army of the West. He was conveyed to Fort Monroe, and indicted by the Grand Jury of the District of Columbia for treason. He was never brought to trial; never asked pardon, and only asked a trial, but, after two years' imprisonment, was released, at the instance of the government, on bail, Horace Greeley becoming one of his sureties. He was included in the General Amnesty Act of Congress (Dec. 25, 1868). In 1871 he had a public reception at Atlanta, Ga., and made a speech in which he reaffirmed his adhesion to the doctrine of State sovereignty. For several years after the war he was president of a Southern insurance company and resided in Memphis, Tenn. The last years of his life were spent at Beauvoir, Miss., on an estate that he bought of Mrs. Dorsey before her death. He died in New Orleans, La., Dec. 6, 1889, and in 1893 amid imposing ceremonies his remains were removed to Richmond, Va., and re-interred in Hollywood Cemetery.

Davis, Jefferson Columbus, an American military officer; born in Clark co., Ind., March 2, 1828. He left school for the Mexican War, in which he received a commission for gallantry. He was with the garrison at Fort Sumter, S. C., when its bombardment began the Civil War. He received the brevet of Major-General and the full rank of colonel in the regular army for distinguished service on the Union side during the war. For some years after the war he was stationed on the Pacific coast, and was the first United States army officer to hold command in Alaska, where a new post, Fort Davis, was named after him in 1900. He died in Chicago, Nov. 30, 1879.

Davis, John, an English navigator; born near Dartmouth, in Devonshire, about 1550; went to sea at an early age. In 1585 he was sent out with two vessels to find a N. W. passage, when he discovered the straits which still bear his name. He made five voyages to the East Indies, on the last of which he was killed in an engagement with some Japanese pirates off the coast of Malacca, Dec. 30, 1605.

Davis, John Chandler Bancroft, an American lawyer and diplomatist; born in Worcester, Mass., Dec. 29, 1822. In 1849 he went to London as secretary of the United States legation. He represented the United States in the "Alabama" contest, zealously pushing the "indirect" claims; was Minister to Germany and judge of the United States Court of Claims; became reporter of the United States Supreme Court in 1883.

Davis, Mary Evelyn (Moon), an American poet; born in Talladega, Ala., in 1852.

Davis, Rebecca Harding, an American novelist; born in Washington, Pa., June 24, 1831. She contributed many short stories and sketches to periodicals, and has written several novels.

Davis, Richard Harding, an American novelist and contributor to periodical literature; born in Philadelphia, April 18, 1864. He graduated at Lehigh University, and entered journalism in Philadelphia. He has, since 1891, been constantly engaged in story-writing, and descriptive narration of events, places, and people. In 1898 he was a war correspondent in Cuba and in 1900 he acted in the same capacity in South Africa.

Davis, Varina Anne Jefferson, "the Daughter of the Confederacy"; born in Richmond, Va., June 27, 1864. Her father was Jefferson Davis, the President of the Confederate States, and she was born in the Executive Mansion. Her education was obtained partly in the United States and partly in Germany and France. She died at Narragansett Pier, R. I., Sept. 18, 1898.

Davis, Varina Howell Jefferson, widow of the late Jefferson Davis, President of the Confederate

States, born in Natchez, Mississippi, May 7, 1826, daughter of William Burr and Margaret Kempe Howell, married to Jefferson Davis Feb. 25, 1845, and was with him in all his public and private life, sharing his imprisonment after the war. Assisted her late husband to write "Decline and Fall of the Confederate Government." Was seriously ill, Sept. 1903.

Davis Strait, a strait that washes the W. coast of Greenland, and connects Baffin Bay with the Atlantic Ocean. At its narrowest point, immediately N. of the Arctic circle, it measures about 200 miles across. In 1888 the identity between Ginnunga Gap, referred to in the Sagas, and the present Davis Strait was demonstrated.

Davit. 1. A beam projecting from a ship's bow, for the attachment of the tackle whereby the anchor-fluke is lifted without dragging against the side of the vessel. The operation is nautically called fishing the anchor.

2. One of a pair of cranes on the gunwale of a ship, from which are suspended the quarter or other boats. The boat-tackles are attached to rings in the bow and stern of the boat respectively, and the fall is belayed on deck.

Davitt, Michael, founder of the Irish Land League; born near Straid, County Mayo, Ireland, in 1846. Evicted from their small holding, the family emigrated to Haslingden in Lancashire (1851); and here six years later the boy lost his right arm through a machinery accident in a cotton factory. In 1866 he joined the Fenian movement, the result being that he was sentenced in 1870 to 15 years' penal servitude. He was released in 1877; and, supplied with funds from the United States, began some two years later an anti-landlord crusade in Ireland, which culminated in the foundation of the Irish Land League (Oct. 21, 1879). Davitt was henceforward in frequent collision with the government, and from February, 1881, to May, 1882, was imprisoned in Portland for breaking his ticket-of-leave. Mr. Davitt was elected to the British Parliament in 1892 as an anti-Parnellite, but unseated on petition, on the ground of clerical and other intimidation. He was returned in 1895. He went to Russia for the New York American in 1903 to get the truth about the Kishineff massacre of Jews, and his dispatches on the subject attracted widespread attention.

Davout, Louis Nicolas, a Marshal of France; born in Annoux, May 10, 1770. He studied with Napoleon at Brienne, and entered the army in 1785. He took sides with the revolutionists, fought several battles under Dumouriez, and was made a Brigadier-General in 1793. He accompanied Napoleon in his Italian campaigns and in his expedition to Egypt. In 1804 he was made a marshal of the empire. The victories of Ulm and Austerlitz were mainly due to him. He joined the Russian expedition, and was wounded at Borodino. After the retreat from Moscow he defended Hamburg against all the forces of the allies, and surrendered only after the peace of 1814. When Napoleon returned from Elba, Davout, was appointed his minister of war. After the battle of Waterloo he lived in retirement till 1819, when he took his seat in the Chamber of Peers. He died in Paris June 1, 1823.

Davy, Sir Humphry, Bart., an English chemist; born in Penzance, Dec. 17, 1778. He early developed a taste for scientific experiments. So successful was he in his studies that he was appointed Professor of Chemistry in the Royal Institution at the age of 24. In 1803 he was chosen a member of the Royal Society.

The numerous accidents arising from fire-damp in mines led him to enter upon a series of experiments on the nature of the explosive gas, the result of which was the invention of his safety-lamp. He was knighted in 1812, and created a baronet in 1818. He died in Geneva, May 29, 1829.

Davy Jones, a sailor's familiar name for a malignant sea-spirit or the devil generally. The common phrase "Davy Jones's locker" is applied to the ocean as the grave of men drowned at sea.

Davy Lamp, the safety-lamp of Sir Humphry Davy, in which a wire-gauze envelope covers the flame-chamber and prevents the passage of flame outward to the explosive atmosphere of the mine, while it allows circulation of air.

Davyum (after Sir H. Davy), a metal of the platinum group discovered in 1877. It is a hard, silver metal, slightly ductile and extremely infusible.

Dawes, Anna Laurens, an American writer, daughter of Henry L. Dawes; born in North Adams, Mass., May 14, 1851. She has written much for periodicals.

Dawes, Henry Laurens, an American legislator; born in Cummington, Mass., Oct. 30, 1816. He graduated at Yale in 1839. Becoming a lawyer, he entered the State Senate as a Republican and in 1857 was elected to Congress, serving in the House until 1873. He was elected to the United States Senate. The condition of the Indian tribes especially claimed his attention, and since retirement from Congress he has been at the head of the Commission to the Five Civilized Tribes.

Dawes, Rufus, an American poet; born in Boston, Jan. 26, 1803. His verses were sung at the laying of the corner-stone of Bunker Hill monument. He died in Washington, D. C., Nov. 30, 1859.

Dawson City, the most important town in the gold region of the Klondike in Alaska. It is on the E. side of the Yukon river, and is reached by a perilous journey over the CHILKOOT PASS. Dawson is 575 miles from Juneau, the point from which most of the gold-seekers start. It was founded by Joseph Ladue, a miner, who built the first house here, Sept. 1, 1896. The place grew as if by magic. In September, 1898, three tons of gold, worth about $1,500,000, were shipped from Dawson, and the yield of gold continues very large. Pop. (1900) est. 25,000.

Dawson, George Mercer, a Canadian geologist; born in Pictou, Nova Scotia, Aug. 1, 1849. He was educated at McGill University and at the Royal School of Mines in London. In 1874 he was made Assistant Director and in 1895, Director of the Geological Survey of Canada.

Dawson, Henry, an English landscape painter; born in 1811; died 1878.

Dawson, Sir John William, a Canadian geologist; born in Pictou, Nova Scotia, Oct. 13, 1820; died in Montreal, Nov. 19, 1899.

Day, the time taken by the earth to revolve once on its axis. This varies according to the method adopted in making the calculation. A solar day is the interval between the time of the sun's coming to the meridian and returning to it again. Similarly a sidereal day is the interval between the time of a star's coming to the meridian and again returning to it on the immediately subsequent night. An apparent day is the interval which exists between two successive transits of the sun across the meridian. An astronomical day is a day beginning at 1 P. M. and continuing to the next. It is divided into 24 hours, not into two periods of 12 hours each.

A day, in law, includes the whole 24 hours from midnight to midnight. In reckoning periods of time from a certain event, the day on which the event occurred is excluded. On the other hand, if it be required to prove survival for a certain number of days, it will suffice if the person be alive for any portion, however small, of the last day. While an obligation to pay on a certain day would therefore be theoretically discharged by payment before midnight, the law requires that reasonable hours be observed.

The time at which a bill is actually due and payable, except in the case of bills payable on demand or at sight, is three days after the time expressed on the face of it, and these three additional days are called days of grace.

Day, Jeremiah, an American educator; born in New Preston, Conn., Aug. 3, 1773. He was president of Yale College from 1817 to 1846. He died in New Haven, Conn., Aug. 22, 1867.

Day, or **Daye, Stephen,** an American colonial printer; born in London about 1610. He was employed by the Rev. Joseph Glover to accompany him to America in 1638, to operate a printing press which he was going to set up in Massachusetts. Mr. Glover died on the voyage and the press was placed in the house of Rev. Henry Dunster, first president of Harvard College. The first book printed in the colonies was issued from it in 1640, and was entitled "The Whole Booke of Psalmes, faithfully translated into English metre." Day died in Cambridge, Mass., Dec. 22, 1668.

Day, William Rufus, an American jurist; born in Ravenna, O., April 17, 1849. He graduated from the University of Michigan, and the law school of the same institution. He immediately opened a law office in Canton, O. In 1886 he was elected judge of the Court of Common Pleas and in 1889 was appointed judge of the United States Circuit Court for the Northern District of Ohio, but declined. In 1897 he was appointed Assistant Secretary of State by President McKinley, and in 1898 became Secretary of State, conducting all the negotiations of the Spanish war. He was also made a member of the commission which framed the treaty of peace with Spain in Paris. In 1899 he was appointed a United States Circuit judge.

Dayton, city and county-seat of Montgomery Co., O.; on the Great Miami river at the mouth of the Mad river; 60 miles N. E. of Cincinnati. It is the fifth city in Ohio in population and importance. Dayton was settled in 1796; incorporated in 1805; and chartered as a city in 1841. Pop. (1900) 85,333.

Dayton, William Louis, an American diplomatist; born in Baskingridge, N. J., Feb. 17, 1807. He graduated at Princeton and became a lawyer, Associate Judge of the Supreme Court and United States Senator. In 1856 he was nominated for the vice-presidency by the Republican party. From 1857 to 1861 he was Attorney-General of New Jersey. In 1861 he was appointed Minister to France, holding the post until his death, in Paris, Dec. 1, 1864.

Deacon, (1) a servant, a waiting-man; (2) a minister of the Church, especially a deacon, a deaconess. Three portions of the New Testament refer to the ecclesiastical officers so denominated. In Phil. i: 1, they are mentioned in conjunction with the "bishops," and were evidently of inferior authority to them, for they are mentioned last. In I Tim. iii 6–13, the proper qualifications requisite for their office, as well as the character which their wives should possess, are pointed out, but no mention is made of the precise duties which they had to discharge. In Rom. xvi: 1, Phebe is described as a servant or deaconess of the Church at Cenchrea, and in commendation of her it is stated that she had been a succorer of many, the Apostle Paul himself being among the number.

Deaconess, a female deacon in the early Christian Church. The term is sometimes applied to a sister of mercy. Deaconesses existed in the 1st century, and were generally respectable matrons or widows charged to look after the poor and perform other offices of utility to the Church. The office of deaconess lapsed in the Western Church in the 5th and 6th centuries, and in the Greek Church about the 12th. It has been recently revived in the United States, Germany, and to a certain extent in England.

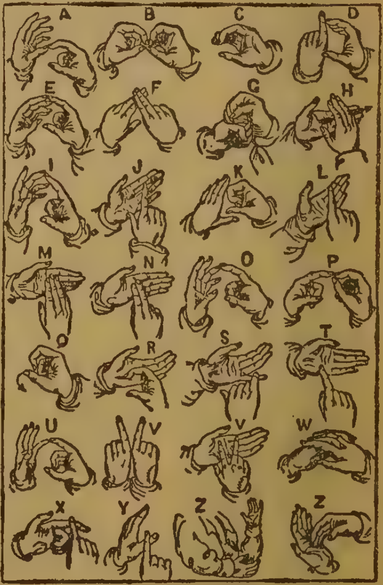
Dead, Book of the, the great funerary work of the ancient Egyptians, who themselves entitled it "Per-em-Hru," "to go forth from day." It is a collection of prayers and exorcisms composed at various periods for the benefit of the pilgrim-soul in his journey through Amenti (the Egyptian Hades); and it was in order to provide him with a safe conduct through the perils of that terrible valley that copies of the work, or portions of it, were buried with the mummy in his tomb.

Deadly Nightshade, a plant botanically known as belladonna, yielding an extract of much utility in ophthalmic investigation. The "beauty" implied by the name is in the berries, which are shining black, but are poisonous. The best known antidote to them is vinegar.

Dead Sea, the usual name, dating from the time of Jerome, for a most remarkable lake in the S. E. of Palestine, called in the Old Testament The Salt Sea, Sea of the Plain, or East Sea; by Josephus, Lacus Asphaltites; and by the Arabs now, Bahr-Lut, "Sea of Lot." It is 46 miles long, with a breadth of from 5 to 9 miles. Its surface which is lower than that of any water known, is 1,292 feet below the level of the Mediterranean. The depth of the greater part, the N. section, is about 1,300 feet; but at the S. end the water is only from 3 to 12 feet deep. The shape is that of an elongated oval, interrupted by a promontory which projects into it from the S. E. The Dead Sea is fed by the Jordan from the N. and by many other streams, but has no apparent outlet, its superfluous water being supposed to be entirely carried off by evaporation. Along the E. and W. borders of the Dead Sea there are lines of bold, and in some cases perpendicular, cliffs rising in general to an elevation of 1,500 feet on the W. and 2,500 feet on the E. These cliffs are chiefly composed of limestone, and are destitute of vegetation except in the ravines traversed by fresh water streamlets. The N. shores of the lake form an extensive and desolate muddy flat, marked by the blackened trunks and branches of trees, strewn about and incrusted with salt. The S. shore is low, level, and marshy, desolate, and dreary. On this shore is the remarkable ridge of rock-salt, 7 miles long and 300 feet high, called Khashm Usdom (Ridge of Sodom). Lava-beds, pumice-stone, warm springs, sulphur, and volcanic slag prove the presence here of volcanic agencies at some period. The neighborhood of the Dead Sea is frequently visited by earthquakes, and the lake still occasionally casts up to its surface large masses of asphalt.

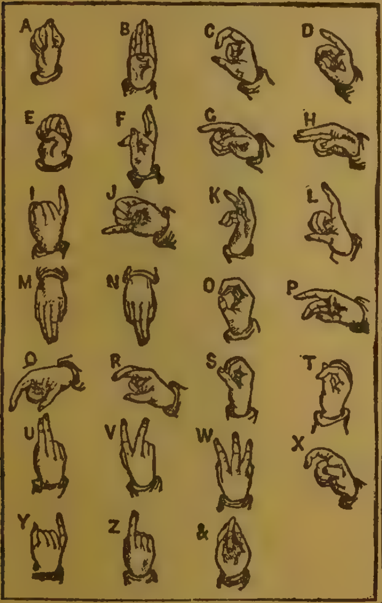
The water of the Dead Sea is characterized by the presence of a large quantity of magnesian and soda salts. Its specific gravity ranges from 1172 to 1227 (pure water being 1000). The proportion of saline matter is so great, that while sea-water contains only 3.5 per cent. of salts, the water of the Dead Sea contains upward of 26 per cent., or more than eight times as much as that of the ocean. In all lakes or collections of water without any outflow, the water acquires an infusion of salt, its feeders constantly bringing in this material, while none can go off by evaporation, even when the shores do not as here abound in salt and niter. The evaporation is great as the heat is intense, and the sea rather contracts than increases. Rain hardly ever falls; the water is nearly as blue and clear as that of the Mediterranean; and though its taste is horribly salt and fetid, a bath in it is refreshing. Owing to the great specific gravity of the water, it is almost impossible for the bather to sink in it, strive as he may.

Deaf and Dumb, or **Deaf-Mutes,** persons both deaf and dumb, the dumbness resulting from the deafness which has either existed from birth or from a very early period of life. Such persons are unable to speak because they have not the guidance of the sense of hearing to enable them to imitate sounds. The two chief methods of conveying instruction to the deaf and dumb are by the means of the manual alphabet, and by training them to watch the lips of the teacher during articulation. There are two kinds of manual alphabet, the double-handed alphabet, where the letters are expressed by the disposition of the fingers of both hands; and the single-handed, in which the letters are formed with the fingers of one hand. Particular gestures which are attached to each word as its distinctive sign are largely used, as are also real objects



DEAF-MUTE ALPHABET—DOUBLE HAND.

and models, pictures, etc. The method of teaching by articulation, the pupil learning to recognize words and in time to utter them, by closely watching the motions of the lips and tongue in speech, and by being instructed through diagrams as to the different positions of the vocal organs, is now receiving much attention. It is by no means a novel system, but of late it has vastly increased in favor with authorities. A new method of teaching articulation has recently been brought into notice, consisting in the use of the system of "visible speech," devised by Prof. Melville Bell. The characters of the alphabet on which this system is founded are intended to reveal to the eye the position of the vocal organs in the formation of any sound which the human mouth can utter. Its practical value has not been tested sufficiently.



DEAF-MUTE ALPHABET—SINGLE HAND.

Deak, Francis, a Hungarian politician; born at Kehida in 1803. He died in Budapest, Jan. 29, 1876.

Deal, a municipal borough and seabathing place of England, in the E. of Kent. It has been one of the Cinque Ports since the 13th century. Of the three castles built by Henry VIII. in 1539, Deal Castle is the residence of its "captain"; Sandown Castle has been blown up as dangerous through the encroachment of the sea; and Walmer Castle is now the residence of the Warden of the Cinque Ports. It is supposed that Julius Cæsar landed near here in 55 B. C.

Deal, in the United States, a plank 12 feet long, 11 inches wide, and 2½ inches thick.

Dealfish, a genus of deep-sea bony fishes. Some eight species are known, and are found on the W. coast of South America and the shores of Europe. They rarely come to the surface.

Dean (literally, a head or chief of 10 men). In the United States the several schools of medicine, law, etc., connected with the universities frequently appoint a dean, whose functions vary with the requirements of his particular institution. The dean of a faculty is its registrar or secretary. The oldest in service of several officials of equal rank is known as a dean, as, for instance, dean of the diplomatic corps. It is also applied in courtesy to the oldest in service in any calling or profession. It is also a religious title or rank in the Anglican Church.

Dean, James A., an American educator; born in Hubbardstown, Vt., in 1823. He graduated at Andover Theological Seminary and entered the Methodist ministry. He became an authority on female education. He died March 30, 1885.

Dean, John Ward, an American antiquarian; born in Wiscasset, Me., March 13, 1815. Died at Medford, Mass., Jan. 22, 1902.

Deane, Silas, an American diplomatist; born in Groton, Conn., Dec. 24, 1737. With Franklin and Lee he negotiated the treaty between France and the United States in 1778. He died in Deal, England, Aug. 23, 1789.

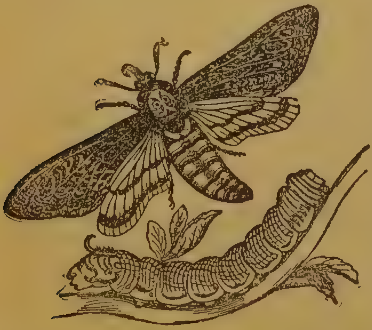
Dearborn, Henry, an American soldier; born in North Hampton, N.

H., Feb. 23, 1751. He won renown by a gallant charge at the battle of Monmouth in 1778, and by the capture of York (Toronto) and Fort George in 1813. He was Secretary of War under President Jefferson. He died in Roxbury, Mass., June 6, 1829.

Death, the cessation of life; the state of any being, animal, or plant, in which the vital functions have totally and permanently ceased to act. The signs of actual death are the heart's arrest and the gradual extinction of the vital functions; changes in the tissues; and changes in the external appearance of the body.

Death, in a legal point of view, is either natural or civil; the former being the cessation both of physical life and of the legal rights which attach to it, the latter the cessation of the legal rights while the physical life remains.

Death's-head Moth. The markings on the back of the thorax very closely resemble a skull, or death's-head; hence the English name. It flies after sunset and emits peculiar sounds somewhat resembling the squeaking of a mouse, but how these are produced naturalists have not been able satisfactorily to explain. It attacks beehives, pillages the honey, and disperses the inhabitants.



DEATH'S-HEAD MOTH AND CATERPILLAR.

Death Tick, a beetle, an inmate of human dwellings, which makes a ticking sound. This, being most readily heard in that stillness which attends times of sickness and anxiety, has become associated with superstitious notions and fears, being regarded as indicative of an approaching death.

Death Valley, a narrow valley between the Panamint and Funeral mountains, in California. It is traversed by the Amargosa river, which is usually a dry channel, though probably it was formerly full of water. The level of the valley is covered with salt, supposed to have been brought by the torrents from the surrounding desert and left on the evaporation of the water. Death Valley is considered to be the hottest and dryest place in the United States. A temperature of 122° F. has been observed.

De Bary, Heinrich Anton, a German botanist; born in Frankfort-on-Main, Jan. 26, 1831. He died in Strasburg, Jan. 19, 1888.

Debenture, in finance, a certificate or document signed by a legally authorized officer, as an acknowledgment of a debt due to some person; a deed or bond of mortgage on certain property for the repayment to a certain person of a certain sum of money advanced by such person, together with interest thereon at a certain stated rate.

Deboe, William J., an American lawyer; born in Crittenden Co., Ky., in 1849; graduated at Ewing College, Illinois, and at the Medical Department of the University at Louisville; practised medicine for a number of years till his health failed; resumed the study of law; was admitted to the bar, and practised in Marion, Ky. He was a delegate to the Republican National Convention which met in Chicago and nominated Benjamin Harrison for the presidency in 1888, and was elected to the United States Senate in 1897–1903.

Deborah, a Hebrew seer or prophetess who lived in the time of the judges: by the aid of Barak delivered the N. tribes from the oppression of Jabin, and secured a peace of 40 years' duration. The triumphal ode (Judges v) attributed to her is a remarkable specimen of Hebrew poetry.

Debreczin, a town of Hungary, on the edge of the great central plain, 113 miles E. of Budapest. It is considered the headquarters of Hungarian Protestantism. Population 58,952.

Debs, Eugene Victor, an American socialist; born in Terre Haute, Ind., Nov. 5, 1855. He received a common school education and became a locomotive fireman. He was elected to the Indiana Legislature in 1885 and was later an official of the Brotherhood of Locomotive Firemen, and, from 1893 to 1897, president of the American Railway Union. He conducted the strike of 1893 in Chicago, and was later sent to jail for contempt, because of his management of the same, though he pleaded innocence of any crime and requested to be tried by a jury and be allowed to summon witnesses in his defense. Since 1897 he has been prominent in the Socialist movement, and in 1900 was the candidate of the Social Democratic Party for President of the United States.

Debt, that which is due from one person to another; that which one person is bound to pay or perform to another; due; obligation; liability. That which any one is obliged to do or to suffer.

In the United States originally imprisonment of debtors was adopted as a part of the common law, but at the present time imprisonment for debt, except in case of fraud, or of an absconding debtor, does not legally exist in any of the States. Most of the States, by constitutional provision, have prohibited arrest or imprisonment for debt, while the other States, either by direct statutes prohibiting imprisonment for debt, or by poor debtors laws, or by insolvent laws, secure the same result; it being held to be against public policy to deprive a man, by imprisonment, of the power to pay his debts, and make him a direct charge upon the State, a principle long ago embodied in the brief remark by an Indian chief, when he saw a man in prison for debt, "He catch no beaver there."

Debt, National, the amount which a State admits owing to those who have advanced money for the use of the government on occasions when its expenditure has exceeded its income.

Decade, is sometimes used for the number 10, or for an aggregate of 10. The books of Livy's Roman history are divided into decades. In the French Revolution, decades, each consisting of 10 days, took the place of weeks in the division of the year. The term is now usually applied to an aggregate of 10 years.

Decalogue, the Ten Commandments given by God to Moses on Mount Sinai. They were first introduced into the liturgy of the Church of England in the prayer-book of Edward VI., in 1552.

Decameron, anything of 10 days' occurrence; also the title given to a collection of tales by Boccaccio, written in 10 parts, each part containing 10 stories, and being supposed to occupy one day in the narration.

Decamps, Gabriel, a French painter; born in Paris in 1803. He died Aug. 22, 1860.

De Candolle, Augustin Pyrame, a Swiss botanist, descended from an ancient noble family of Provence; born in Geneva, Feb. 4, 1778; died April 9, 1893.

Decapoda. The highest order of crustaceans, so called from having five pairs of legs.

Decapolis, a country in Palestine, which contained 10 principal cities, on both sides of the Jordan. According to Pliny, they were Scythopolis, Philadelphia, Raphanæ, Gadara, Hippos, Dios, Pella, Gerasa, Canatha, and Damascus. Josephus inserts Otopos instead of Canatha.

Decatur, Stephen, an American naval officer; born in Sinnepuxent, Md., Jan. 5, 1779. He was of French descent, and obtained a midshipman's warrant in 1798. He saw some service against the French, and was commissioned lieutenant in the following year; and at the close of the French war in 1801 he was one of the 36 officers of that rank retained in the reduced strength of the navy. In the war with Tripoli (1801–1805), he gained great distinction, his brilliant achievement of boarding and burning the captured "Philadelphia" in the harbor of Tripoli, and then escaping under the fire of 141 guns, Nelson pronounced "the most daring act of the age." For this he received his commission as captain in 1804; in 1810 he was appointed commodore. In the war with England in 1812 he captured the frigate "Macedonian," but in 1814 he was obliged to surrender, after a resistance that cost him a fourth of his crew, to four British frigates. In 1815 he chastised the Algerines for their piracy, and compelled the dey to declare the American flag inviolable; and he obtained indemnities for violating treaty stipulations from the Bey of Tunis and the Pasha of Tripoli. He was appointed a Navy Commissioner in 1816, and was killed in a duel by Commodore James Barron, near Bladensburg, Md., March 22, 1820.

Deccan, a term, rather of historical interest than of actual use, applied to the peninsula of Hindustan to the S. of the Vindhya Mountains, which separate it from the basin of the Ganges.

December, the last month of the year. In the old Roman calendar, before the time of Julius Cæsar, the year began with March, and that which is now the 12th was then the 10th month; hence the name (decem "10"). Our Saxon ancestors called it Mid-winter-month and Yule-month.

Decemvir, one of the body of 10 magistrates, in whom was vested the sole government of Rome for a period of two years, from B. C. 449 to B. C. 447. The brutal and licentious conduct of one of the number, Appius Claudius, caused their downfall in the latter year.

Deception Island, a volcanic island belonging to the South Shetland group in the Antarctic Ocean, directly S. of Cape Horn. Amid its ice-covered rocks lies a crater-lake, five miles in circumference, surrounded by hot springs.

Deciduous Trees, those which annually lose and renew their leaves. The greater part of the trees and shrubs of temperate regions are deciduous; but within the tropics the forest retains always its luxuriance of foliage, except in countries where the dry season is extremely marked. Trees not deciduous are called evergreen.

Decimal Arithmetic, the common system of arithmetic, in which the figures represent a different value, progressing or decreasing by tens; the value increasing tenfold for each place nearer to the left hand, and decreasing tenfold for each place nearer the right hand. Also that part of the science of numerical calculation which treats of decimal fractions.

Decimal Fraction, a fraction whose denominator is a decimal or power of 10.

Decimal System, the name given to any system of weights, measures, or money in which the unit is always multiplied by 10 or some power of 10 to give a higher denomination, and divided by 10 or a power of 10 for a lower denomination. This system has been rigidly carried out in France, and the principle is observed in the coinage of the United States, Belgium, Italy, Spain, Portugal, and other countries.

Decimation, the selection of the 10th man of a corps of soldiers by lot for punishment, practised by the Romans. Sometimes every 10th man was executed; sometimes only one man of each company, the 10th in order. The term is frequently used in a loose way for the destruction of a great but indefinite proportion of people.

Deck, a horizontal platform or floor extending from side to side of a ship, and formed of planking supported by the beams. In ships of large size there are several decks one over the other. The quarter-deck is that above the upper-deck, reaching forward from the stern to the gangway.

Decken, Karl Klaus von der, a German African traveler; born in Kotzen, Mark of Brandenburg, Aug. 8, 1833; was murdered by a Somali on Sept. 25, 1863, while exploring the east coast of Africa.

Declaration. (1) That part of the process or pleadings in which a statement of the plaintiff's complaint against the defendant is set forth, with the additional circumstances of time and place when and where the injury was committed, where these are requisite. (2) A simple affirmation allowed in certain cases to be taken instead of an oath or solemn affirmation. (3) The statement made by a prisoner on being arrested on suspicion of a crime, which is taken down in writing.

Declaration of Independence, a document drawn up by a committee of the American Congress, consisting of Thomas Jefferson, of Virginia; John Adams, of Massachusetts; Roger herman, of Connecticut; Robert R. ivingston, of New York; and Benja- in Franklin, of Pennsylvania. A raft was reported by this committee n June 28. On July 2 a resolution as adopted declaring the colonies ee and independent States, and on uly 4, the Declaration of Independ- ice was agreed to, engrossed on aper, and signed by John Hancock, resident. It was afterward engrossed n parchment and signed by the epresentatives of the States. The idependence of the United States as acknowledged by France, Jan. 6, 1778, and by Holland, April 19, 782; and provisional articles of eace were signed by England, Sept. 1782.

Declaration of Indulgence, a eclaration or proclamation issued by harles II. in 1672, professedly to avor the Nonconformists, in giving iem liberty to adopt and practise ieir own methods of worship, which ad been curtailed by the Conventicle nd Five Mile Acts. Parliament, owever, suspecting that its real ob- ct was to benefit the Roman Catho- cs, passed in the following year the est Act.

Declaration of Rights, a decla- ation drawn up by Parliament, and resented to William III. and Mary n their acceptance of the Crown of ngland, 1689. In it Parliament aimed the right of Englishmen to eep arms for their own defense; that ie election of members of Parliament ught to be free; that no excessive ies or unusual punishments should inflicted; that money should not be ised without the consent of Parlia- ent; that a standing army must not raised or kept up in times of peace ithout the consent of Parliament, c. These articles were afterward nbodied in the Bill of Rights.

Declaration of War, a public roclamation by the State in which it eclares itself to be at war with an- her power.

Declaratory Act, an act passed by ie British Parliament in 1766 at the me when the Stamp Act was re- ealed. While the latter was intended conciliate the irritated American olonies, the Declaratory Act asserted ie sovereignty of the Parliament and its right to make laws binding on the colonies "in all cases whatsoever."

Declension, in grammar the aggregate of the inflections or changes of form which nouns, pronouns, and adjectives receive in certain languages according to their meaning or relation to other words in a sentence, such variations being comprehended under the three heads of number, gender, and case, the latter being the most numerous.

Declination, in astronomy, the distance of a heavenly body from the celestial equator (equinoctial), measured on a great circle passing through the pole and also through the body.

Decoction, the term applied in pharmacy to the solution procured by boiling an organic substance with water.

Decomposition, the rather comprehensive term applied to the breaking up of complex substances or substances of delicate stability, into others which are less complex or more stable. Such breaking up is very familiar in many chemical changes, and may result from increase of temperature, the action of light, the action of ferments and micro-organisms, etc.

Decorated Style, the second style of Pointed (Gothic) architecture.

Decoration Day, a day set apart for decorating the graves of soldiers and sailors who fell in the American Civil War (1861–1865) and in other wars. State Legislatures have designated a given day a legal holiday for this purpose, and the President and governors unite in recommending the observance of the same day (May 30), now known as "Decoration Day," in nearly every State of the Union. In the Southern States various days in April are set apart for decorating the graves of the Confederate dead, and the name "Memorial Day" is more commonly used there than Decoration Day.

Decorations, the badges, medals, and ribbons of any order of nobility or merit. The most noted are those of the Order of the Garter, of the Legion of Honor, of the Loyal Legion, and the several European decorations bestowed by sovereigns. American citizens holding office under the United States government are not permitted to accept decorations from foreign rulers without consent of Congress.

Decorative Art, that form of art that has for its purpose the appropriate adornment of some utilitarian object, thereby adding to its beauty, but not to its usefulness.

De Costa, Benjamin Franklin, an American clergyman and writer; born in Charlestown, Mass., July 10, 1831. He became president (1884) of the first branch of the "White Cross Society," of which he was the organizer.

Decourcelle, Pierre, a French dramatist; born in Paris, Jan. 25, 1856. His first work was the five-act drama, "The Ace of Clubs," written for Sara Bernhardt; it had an extraordinary success. Then followed a succession of comedies, dramas, comic-opera libretti, and dramatizations of popular novels, written by him individually or in collaboration with other authors.

Decoy, a place into which wild fowls are decoyed in order to be caught.

Decree, in general, an order, edict, or law made by a superior as a rule to govern inferiors. In law it is a judicial decision or determination of a litigated cause.

Decree Nisi, literally, a "decree unless," in New York State and in England, is the decree of divorce issued by the court on satisfactory proof being given in support of a petition for dissolution of marriage; it remains imperfect for several months, and is then made absolute, "unless" sufficient cause is shown why it should not be made so. If within the time appointed good reason can be shown for such a proceeding, the decree nisi will be reversed. Rhode Island has recently adopted a similar law.

Decrepitation, the crackling noise which several salts make when suddenly heated, accompanied by a violent exfoliation of their particles, due to the sudden conversion into steam of the water which is mechanically inclosed between the solid particles of the body; or to the unequal expansion of the laminæ of which the mineral is composed in consequence of their being imperfect conductors of heat. The true cleavage of minerals may be often detected in this way, for they fly asunder at their natural fissures.

Decretals, a general name for the Papal decrees, comprehending the rescripts (answers to inquiries and petitions), decrees, mandates (official instructions for ecclesiastical officers, courts, etc.), edicts (Papal ordinances in general), and general resolutions of the councils. The decretals form a most important portion of the Roman Catholic canon law, the authoritative collection of them being that made by the orders of Gregory IX. and published in 1234.

Deduction, in logic, as opposed to induction, is the method of reasoning, from generals to particulars, as the latter is from particulars to generals.

Dee, the name of several British rivers.

Deed, an instrument in writing or in print, or partly in each, comprehending the terms of a contract or agreement, and the evidence of its due execution between parties legally capable of entering into a contract or agreement.

In the United States, the formalities required for the transfer of real estate are governed by local laws. Generally throughout the States, signing, sealing, attestation, acknowledgment, and delivery are the essential requisites of a valid deed of conveyance. The usual form of attestation being "signed, sealed, acknowledged, and delivered in the presence of us witnesses," then follow the names of the subscribing witnesses. The grantor must himself sign the deed, or if it is signed by his agent he must adopt the signature as his own in the presence of the subscribing witnesses and the commissioner or other qualified officer. A deed takes effect from the date of actual delivery or the date of record. Everywhere in the United States it is the law that deeds of conveyance must be recorded either in the proper office of the county in which the land lies — or if the conveyance be by grant or letters patent from the State or United States, the record must be made in the land office of the State or United States.

Deems, Charles Force, an American clergyman and writer; born in Baltimore, Md., Dec. 4, 1820. From

1866 to his death he was pastor of the Church of the Strangers of New York city, and was widely noted as editor and author. He died in New York city, Nov. 18, 1893.

Deemster, an officer formerly attached to the High Court of Justiciary in Scotland, who formally pronounced the doom or sentence of death on condemned criminals. The office was conjoined with that of executioner. The name is now given in he Isle of Man to two judges who act as the chief-justices of the island, he one presiding over the N., the other over the S. division.

Deep-sea Exploration, that branch of thalassography which investigates the depths of oceans, seas or lakes, determines the nature and distribution of the organic life there o be found, the temperature, constiution and specific gravity of the waer at varying distances from the surace, the causes and characteristics of cean currents, the geological changes n the way of gradual or rapid upeaval or subsidence caused by volanic action and the formation of atolls and other islands.

Deer, a beautiful and well-known uadruped, distinguished from the anelopes by their horns being solid and eciduous, that is, falling off annualy, and again renewed of a larger size han in the preceding year. These orns or antlers always exist on the ead of the male, and sometimes on hat of the female.

The moose or elk is perhaps the nly deer whose general appearance an be called ungraceful, or whose roportions at first sight impress the eholder unfavorably. Its large head erminates in a square muzzle, having he nostrils protruded over the sides f the mouth; the neck which is furished with a short, thick mane, is not onger than the head, which, in the ales, is rendered still more cumrous and unwieldy by large palmatd horns; under the throat is an exrescence, from which issues a tuft of ong hair; the body which is short nd thick, is mounted on tall legs, iving a very ungainly aspect to the nimal, which is not diminished when it is in motion, as its gait is a sort of hambling trot, very efficient, howver, from the great length of its limbs. The moose inhabits the N. parts of both America and Europe.

The reindeer is spread over all the habitable parts of the Arctic regions and the neighboring countries, in Europe being found in Norway and Sweden, more especially in Finmark and Lapland, in Northern Russia, nearly the whole of Siberia, and in North America as far S. as the latitude of Quebec. It occurs also in Spitzbergen, Greenland, and Newfoundland. They have long been domesticated, and their appearance and habits have been frequently described. Their size varies much according to the locality, those in the more polar regions being the largest; 60 and 400 pounds are said to be the extremes of weight. In winter the hair is grayish brown, in summer dark sooty brown. The American reindeer, or caribou, is less perfectly known; it has, however, so strong a resemblance in form and manners to the Lapland deer that it has always been considered to be a variety of the same species. The American Indians have never profited by the docility of this animal to aid them in transporting their families and property, though they annually destroy great numbers for their flesh and hides. There appear to be several varieties of this useful quadruped peculiar to the high N. regions of the American continent.

The Virginia deer is found in all parts of North America, up to 43° N. latitude. Its color varies with the season. In spring it is reddish-brown, in autumn slaty-blue, and in winter dull-brown. It is good hunting and eating.

The stag or red deer is a native of the temperate portions of Europe and Asia. An American representative of the European stag is the wapiti or Canada stag. This deer is at the shoulder from 4 feet 4 to 4 feet 8 inches, the superiority of bulk appearing chiefly in the magnitude of the body. The wapiti lives in herds, varying in number from 10 or 20 up to several hundreds. They feed on grass, the young sprouts of trees, lichens, and in summer on aquatic plants which they seek while sheltering themselves in the water from the bites of flies. They are good swimmers and swift runners, throwing their heads back so that the horns touch their shoulders as they bound through the forest.

The fallow deer is smaller than the stag, being about 3 feet high at the shoulder, and is easily distinguished from it by its spotted coat, longer tail, and palmated horns. Fallow deer are indigenous to Southern and Central Europe and Asia, but in Great Britain they exist only in a semi-wild state.

The roebuck is common enough in the northern half of Scotland, but in the rest of the island is rare. It is smaller than the fallow deer, being about 2 feet 3 inches at the shoulder, and its horns are comparatively small and little branched. The color is bright reddish in summer, the under parts white.

Deerfield, a town of Franklin co., Mass.; on the Connecticut river, and the Boston and Maine and the New York, New Haven and Hartford railroads; 33 miles N. of Springfield. The town was the scene of several contests with the Indians in colonial times. Among them were the "Bloody Brook Massacre" (1675) and the burning of the village by the French and Indians under De Rouville (1703). Pop. (1900) 1,969.

Deergrass, or **Meadow Beauty,** a genus of an Asiatic plant found chiefly in New England. It is noted for the beauty of its flowers, which have bright purple petals, and thrives best on meadow land. It is said that there are but eight species of the order in the United States.

Deermouse, a small rodent found in abundance in this country. Its fur shows various brownish or grayish tints above, while the lower surface and feet, up to the wrists and ankles, are snow-white. The tail, which varies considerably in length, is generally white beneath. The length of the head and body is about three inches.

Defamation, the act of defaming or slandering; the false and malicious uttering of slanderous words with a view to damage the character, reputation, or business of another.

Default, a failure to appear in any court on the day assigned; especially applied to a defendant when he fails or neglects to plead or put in his answer in the time limited. In such cases the plaintiff is entitled to sign judgment against him, which is called judgment by default, and the defendant is said to suffer judgment by default.

Defendant, in law, the party against whom a complaint, demand, or charge is brought; one who is summoned into court, and defends, denies, or opposes the demand or charge, and maintains his own right. The term is applied if the party admits the claim.

Defender of the Faith, a title belonging to the King of England, as Catholicus to the King of Spain, Christianissimus to the King of France, etc. Leo X. bestowed the title of Defender of the Faith on Henry VIII. in 1521, on account of his book against Luther, and the title has been used by the sovereigns of England ever since.

Defenders, a Catholic association in Ireland (1784–1798), the opponents of the Peep o' Day Boys.

Defilading, that branch of the science of fortification, the object of which is to determine, when the intended work would be commanded by eminences within range, the directions or heights of the lines of rampart or parapet, so that the interior of the work may not be incommoded by a fire directed to it from such heights.

Deflection, in navigation, the departure of a ship from her true course; in optics, a deviation of the rays of light toward the surface of an opaque body.

Defoe, Daniel, an English writer; born in London in 1661. In 1719 appeared the most popular of all his performances, "The Life and Surprising Adventures of Robinson Crusoe," the favorable reception of which was immediate and universal. He died in London, April 26, 1731.

De Fontaine, Felix, an American journalist; born in Boston, Mass., in 1832. The first statement given to the North, of the attack on Fort Sumter, was written by him; and he was correspondent of the Charleston "Courier" from the principal battlefields during the Civil War. Subsequently he went to New York city, and was connected with the "Herald" most of the time until his death. He died in Columbus, S. C., Dec. 11, 1896.

De Forest, John William, an American novelist; born in Humphreysville, Conn., March 31, 1826. Without entering college he passed many years in independent study and foreign travel, becoming a proficient in several languages; entered the army as captain at the outbreak of the Civil War, and rose to major; and since 1850 has been a fertile writer of essays, short stories, and novels for the leading magazines, taking prominent rank among American novelists of the present day.

Deformities, variations in the form of the body as a whole, or in one or more of its parts, constituting a departure from the normal conditions of structure, and usually implying a corresponding divergence from natural and healthy functions.

Defregger, Franz, a German genre painter of deserved popularity; born in Stronach in 1835.

Degeneration, a biological term used to describe those not unfrequent cases where an entire organism falls below the structural level of its young stages, or where an organ in the same way loses its fullness of function and becomes more or less atrophied, abortive, and simplified. Applied also to the loss or lack of virile qualities through personal excesses or unfortunate parentage.

De Gerando, Joseph Marie Baron, a French philosopher and statesman; born in Lyons in 1772. He died in 1842.

Deggendorf, a town of Lower Bavaria, on the Danube, which is here crossed by two bridges, 39 miles N. W. of Passau. Its church of the Holy Sepulcher is often visited by more than 30,000 pilgrims annually.

De Giosa, Nicola, an Italian musician; born in Bari, May 5, 1820. His opera, "Don Checco," is very popular in Italy. His 400 songs were widely sung. He died in Bari, July 7, 1885.

Degree, the 360th part of the circumference of a circle. A degree of latitude is the length along a meridian, such that the difference of latitude between its N. and S. ends is one degree — i. e., from the two positions the altitude of the same star is seen to differ by one degree.

Degree, in universities, a mark of distinction conferred on students, members, or distinguished strangers, as a testimony of their proficiency in the arts or sciences, or as a mark of respect, the former known as ordinary, the latter as honorary degrees. The degrees are bachelor, master, and doctor, and are conferred in arts, science, medicine, divinity, and music.

De Haas, Maurice Frederick Hendrick, an American marine painter; born in Rotterdam, Dec. 12, 1832. In 1857 he was made artist to the Dutch navy, and in 1859 he went to New York, where he lived till his death, Nov. 23, 1895. The subjects of his earlier pictures are chiefly from the English Channel and French coast. His best known American work is "Farragut Passing the Forts." He was elected an Associate of the National Academy in 1863, and an Academician in 1867, and was one of the original members of the American Society of Painters in Water Colors.

Dehiscence, a gaping, an opening, a yawning. The opening of capsules and of the cells of anthers for the discharge of their contents.

Dehra Doon, a beautiful and fertile valley in the Meerut division of the Northwestern Provinces, Hindustan, at the S. W. base of the lowest and outermost ridge of the Himalaya.

Deicide, the putting to death of God in the person of our Lord; also one concerned in putting our Lord to death.

Dei Gratia, (by the grace of God), a formula which many European sovereigns add to their title, and which is taken from an expression of the apostle Paul in the New Testament.

Deism, the doctrines or tenets of a deist; the system of belief which admits the being of a God, and acknowledges several of His perfections, but denies not only the existence but the necessity of a divine revelation.

Deist, one who admits the being of a God, but denies the existence or even necessity of a divine revelation, believing that the light of nature and reason are sufficient guides in doctrine and practice; a believer in natural religion only; a freethinker.

A term applied in controversy which arose in England in the 17th and 18th centuries, between those who believed and those who disbelieved in revelation; the latter, however, not occupying the atheistic standpoint, but accepting as a settled point the being of a God.

Dejazet, Pauline Virginie, a French actress; born in Paris, Aug. 30, 1797. She left the stage in 1868, next year received a pension of 2,000 francs, and died Dec. 1, 1875.

De Kalb, John Baron, a French officer; born in Alsace, about 1732. He accompanied Lafayette to America in 1777; was appointed the same year Major-General in the American army; and joined the main force under Washington. In the battle of Camden, Aug. 16, 1780, he was at the head of the Maryland and Delaware troops, who maintained their ground till Cornwallis concentrated his whole force upon them. He fell, pierced with 11 wounds, in the charge upon his regiment before they gave way. He died three days after at Camden, where a monument, of which Lafayette placed the corner-stone, was erected to his memory in 1825.

De Kay, Charles, an American poet, grandson of Joseph Rodman Drake; born in Washington, D. C., July 25, 1848. His poems are mostly founded on themes from Oriental, classical, and literary history.

Dekker, Eduard Douwes a Dutch novelist, pseudonym "Multatuli"; born in Amsterdam, March 2, 1820. He spent several years in government service in the Dutch East Indies. He died in Nieder-Ingelheim, Feb. 19, 1887.

Dekker, Thomas, an English dramatist; born in London about 1570; died some time after 1637.

De Koven, (Henry Louis) Reginald, an American composer; born in Middletown, Conn., April 3, 1859. He was graduated at Oxford in 1879 and studied music in the leading cities of Europe. His operettas have had great success.

De la Beche, Sir Henry Thomas, an English geologist; born near London in 1796; died April 13, 1855.

Delacroix, Eugene, a French painter, chief of the Romantic school; born near Paris, April 26, 1799. In 1857 he was chosen by the Institute to fill the place of Delaroche. He died Aug. 13, 1863. He was an artist of great versatility; mythology, legend, history, and poetry by turns furnishing him with subjects for his brush.

Delafield, Richard, an American military officer; born in New York city, Sept. 1, 1798. He was graduated at the United States Military Academy in 1818 and immediately achieved distinction as a military engineer. He planned the defenses of Hampton Roads and New York city. In the Civil War he rendered invaluable service to the Government in the Engineers' Department, rising from the rank of lieutenant-colonel in 1861 to that of brevet Major-General in 1865. He retired the following year, and died in Washington, D. C., Nov. 5, 1873.

Delagoa Bay, in South East Africa; a large sheet of water separated from the Indian Ocean by the peninsula and island of Inyack. The bay stretches N. and S. upwards of 40 miles, with a breadth of from 16 to 20 miles, and forms the southern extremity of the Portuguese settlement of Mozambique. It is available for vessels of large tonnage, though the presence of shoals, banks, and flats, renders the navigation of the bay somewhat intricate.

De Lancey, Edward Floyd, an American historical writer; born in Mamaroneck, N. Y., Oct. 23, 1821. Wrote "Origin and History of Manors in the Province of New York," etc.

Deland, Margaret Wade (Campbell), an American poet and novelist; born in Allegheny, Pa., Feb. 23, 1857. She is now a resident of Boston.

Delane, John Thadeus, an English journalist; born in London, Oct. 11, 1817. He was graduated at Oxford in 1839, and became editor of the "Times" in 1841, retaining that post till 1877, during which time that paper attained an almost unparalleled influence and a great circulation. He died Nov. 22, 1879.

Delaroche, Hippolyte (familiarly styled Paul), a French painter; born in Paris July 16, 1797. His signal merits consist in correct drawing brilliant and harmonious color, and great distinctness and perspicuity in treatment, rendering the story of his pictures at once intelligible. His works are well known to the general public by engravings. He died in Paris Nov. 4, 1856.

Delaunay, Louis Arsene, a French actor; born in Paris, March 21, 1826; made his debut in October, 1846, at the Odeon. Till he retired (1887), he was one of the most accomplished actors on the French stage.

Delauny, Jules Elie, a French figure and portrait painter; born in Nantes June 12, 1828. In 1856 he received the Grand Prix de Rome; the first-class medal at the Paris Exposition of 1878; and at that of 1889 was awarded the medal of honor. He was made an officer of the Legion of Honor and a member of the Institute. He died in Paris, Sept. 5, 1891.

Delavigne, Jean Francois Casimir, a French poet and dramatist; born in Havre April 4, 1793; died in Montmorency, Dec. 11, 1843.

Delaware, a State in the South Atlantic Division of the North American Union; bounded by Pennsylvania, Delaware river and bay, the Atlantic Ocean, and Maryland; area, 2,050 square miles; one of the original 13 States; number of counties, 3; pop. (1890) 168,493; (1900) 184,735; capital, Dover.

Delaware lies on a level plain, the highest elevation being less than 300 feet above the sea. The N. part is hilly, with a rolling surface, but below Newcastle the ground is flat and sandy and in some parts swampy. The principal streams are the Christiana and the Brandywine rivers. The Christiana is navigable for large steamers as far as Wilmington.

For eight or ten miles inland from Delaware Bay the soil is for the most part a rich clayey loam; but W. of this it is light and sandy, and productive when well fertilized. The swamps where reclaimed are also very productive. In them are extensive forests of cypresses and other evergreen trees, and shrubs of a semi-tropical character, as well as bog-oak, hackmatack, etc. The remainder of the State has been cleared of its forests and is under cultivation.

The State is highly agricultural, ten-thirteenths of its entire area being under cultivation. It is preëminently a fruit growing region, peaches, apples, pears, quinces and other small fruits are extensively raised, and the annual peach crop alone averages 4,000,000 baskets.

Education and religion are well supported in Delaware, and the State is in excellent condition financially.

The governor is elected for a term of four years and receives a salary of $2,000 per annum. Legislative sessions are held biennially. Delaware sends one Representative to Congress.

History.— Delaware was named after Lord De la Ware, governor of Virginia, who sailed up the bay in 1610. The first settlement was made by the Dutch in 1631, and in 1638 a colony of Swedes and Finns built a fort on Christiana creek and called the country New Sweden. There was constant friction between the Dutch and Swedes until 1664, when all the Dutch settlements came under English rule. For over 20 years Delaware was part of Pennsylvania, known as the "three lower counties on the Delaware." The State became independent during the Revolution, and her soldiers, known as the "Blue Hen's Chickens," did admirable service during the war. Delaware was the first State to ratify the Federal Constitution, Dec. 7, 1787. Although a slave-holding State Delaware did not secede in 1861, but strongly supported the Union cause and furnished nearly 14,000 troops.

Delaware is the only American State in which the pillory and whipping post are retained for the punishment of crime.

Delaware, a river of the United States which rises in the Catskill Mountains in New York; separates Pennsylvania from New York and New Jersey, and New Jersey from Delaware; and empties into Delaware Bay. It has a course of about 300 miles, and is navigable for large vessels to Philadelphia, and for smaller craft to the head of tide-water at Trenton (155 miles).

Delaware Bay, an estuary or arm of the sea between the States of Delaware and New Jersey. At the entrance, near Cape Henlopen, is situated the Delaware Breakwater, which affords vessels a shelter within the cape. It was erected by the Federal government, and cost about $3,000,000.

Delaware Indians. See LENAPES.

Delaware, or **Delawarr, Thomas West,** an American colonial governor, born in England. He succeeded his father as third Lord Delaware in 1602 and some years later was appointed governor of Virginia. He arrived at his post in June, 1610, but was prostrated by sickness the following year. He died at sea, June 7, 1618.

Delegate, a person appointed and sent by another or by others, with powers to transact business as his or their representative. The title was given to members of the first Continental Congress in America, 1774. Representatives to Congress from the United States Territories are still designated by this term. They have the right of discussion, but have no vote.

De Leon, Edwin, an American prose-writer; born in Columbia, S. C., in 1828; died in New York city, Dec. 1, 1891.

Delescluze, Louis Charles, a French communist; born in Dreux, Oct. 20, 1809. He adopted a journalistic career and was imprisoned and fined for his socialistic and revolutionary articles. After the fall of the empire and the German occupation he became a prominent member of the Commune, and was shot at one of the barricades May 28, 1871.

Delftware, a kind of pottery originally manufactured at Delft, in Holland, in the 14th century. It was among the best of its day, being considered equal to the Italian in quality, but somewhat inferior in its ornamentation.

Delhi, a city of Hindustan, in the Punjab, capital of a division of the same name, and anciently of the Patan and Mogul empires; about 700 miles N. E. of Bombay, and about 960 miles N. W. Calcutta. It was at one time the largest city in Hindustan, covering a space of 20 square miles, and having a population of 2,000,000. It is now reduced to a circumference of 7 miles, and its population to 208,385 (1901). One of the most remarkable edifices in the city is the Great Mosque, a magnificent structure in the Byzantine-Arabic style, and considered by the Mohammedans the wonder of the world.

On the breaking out of the Indian mutiny in May, 1857, Delhi became the center of the operations of the rebels who flocked to it from all quarters. The nominal representative of the Great Mogul, who held the sovereignty of the place under British protection, joined cause with the rebels; and in addition to assuming the character of an independent potentate, gave his sanction to the massacres and atrocities perpetrated on the European residents. By the middle of June a British army under Generals Wilson and Nicholson was assembled in front of the city, and a siege commenced, which, from the smallness of the besieging force, was necessarily slow and protracted. It was brought to a successful termination on Sept. 20, when Delhi was entered by the British troops, and the nominal sovereignty heretofore possessed by the king was declared extinguished, and he himself, after being tried for the murders committed under his authority, was found guilty, and sentenced as a convict to perpetual banishment. A great part of the place was reduced to ruins in the mutiny and siege, but it has since recovered much of its former appearance, and has also been much improved in its sanitary condition. It was at a great durbar held in Delhi in 1877 that Queen Victoria was proclaimed Empress of India, and King Edward was proclaimed with even greater magnificence in 1902–3.

Delilah, a woman of the Philistines, beloved of Samson. She persuaded him to reveal to her the secret of his great strength, and when she learned that it lay in his long and thick hair, cut off his locks while he was asleep and then treacherously delivered the helpless man into the hands of his enemies.

Deliquescence, the property which certain very soluble salts and other bodies possess of absorbing moisture from the atmosphere.

Delirium, increased ideation ranging from simple confusion of thought to fixed delusion, accompanied by incoherence, restlessness, and frequently combined with some amount of unconsciousness, deepening at times into coma. It often occurs in the course of many diseases; also as a result of overwork.

Delirium Tremens, alcoholism, specially accompanied by delusions, from loss of cerebral power, with general disturbances of functions, depression, and debility, feeble but rapid action of heart, tremor and undecided muscular action, fear, and mental agitation, all indicative of the most depressed condition of all the vital functions.

Delitzsch, Franz, a German theologian; born in Leipsic, Feb. 23, 1813. In 1867 he became Professor of Theology at Leipsic. He died in Leipsic, March 4, 1890. His son, FRIEDRICH DELITZCH, born Sept. 3, 1850, has made a great reputation as an Assyriologist.

Delivery, in law (1) the delivery of a deed, or the handing of it over to the grantee, which is expressed in the attestation, "sealed and delivered," is one of the requisites to a good deed. A deed takes effect only from this delivery; for if the date be false or impossible, the delivery ascertains the time of it. A delivery may be either absolute, that is, to the grantee himself, or to a third person, to hold till some conditions be performed on the part of the grantee.

Delmar, Alexander, an American political economist; born in New York city, Aug. 9, 1836. He established the "Social Science Review" and was its editor in 1864–1866. He is the author of various books on economic subjects.

De Lome, Enrique Dupuy, a Spanish diplomatist; born in Valencia, in August, 1851; graduated in law at the University of Madrid; became first secretary of the Spanish legation in Washington in 1882, and minister to the United States in 1892 and 1895. In February, 1898, it was discovered by the authorities in Washington that he had written a letter to Senor Canalejas, a Spaniard of high rank who had been in the United States a short time previous supposably to make observations for the Spanish government. The letter, which followed Canalejas to Havana, and was probably abstracted from his apartments there by some friend of the insurgents, contained insulting and disparaging phrases regarding the President of the United States, and otherwise plainly showed that neither the writer nor the recipient of it believed that Spain was acting in good faith with the United States government. De Lome at first denied the genuineness of the letter, but it was proved beyond a doubt that he was the author, and he telegraphed his resignation to Madrid, Feb. 9, thus forestalling the request of the American minister there that he should be recalled.

De Long, George Washington, an American naval officer and Arctic explorer; born in New York city, Aug. 22, 1844. Graduating from the Naval Academy in 1865, he reached the grade of lieutenant-commander, and perished of cold and exposure while in command of the "Jeannette" Expedition in 1879–1881. His journals have been published, entitled "The Voyage of the Jeannette" (1883); and the story of the search for the survivors is told in Melville's "In the Lena Delta" (1884). He died in Siberia, Oct. 30, 1881.

Delos, Cynthus, or **Ortygia** (now called SAILLES, SAYLLI, DELO, or DELI), is the smallest of the Cyclades, at the N. of Naxos, and was famous throughout antiquity as having been the birthplace of Apollo and Diana, and further as being consecrated to the worship of the first-named deity. The temple of Apollo at Delos, according to Plutarch, was one of the stateliest buildings in the universe. The decline of Delos dates from the Mithridatic War, when it was laid waste by one of the generals of Mithridates. It is now a mere heap of ruins.

Delphi, or **Delphos** (now CASTRI), a small town of ancient Phocis, in a valley to the W. of Mount Parnassus, was the seat of the most famous of all the oracles of Apollo. From its favorable position this oracle came to be consulted, not only by the Greeks, but even by the neighboring nations, until the time of Constantine the Great, who removed the sacred tripods to adorn the hippodrome of his new city when the responses ceased to be delivered.

Delsarte, Francois Alexandre Nicolas Cherie, a French educator; born in Solesmes, Dec. 19, 1811. He was author of several melodies and romances, but his chief work was the elaboration of a system of dramatic expression, by which the voice and entire action of the body were trained by fixed rules. He aimed to make elocution a science. His system, at least in part, has of late been gaining adherents among elocutionists. He died in Paris, July 19, 1871.

Delta, the name of the fourth Greek letter, corresponding with the English d. As a capital it is formed in the shape of an equilateral triangle. Originally applied to the triangle-shaped island formed by deposits between the two mouths of the Nile; afterward applied to other similarly shaped tracts formed at the mouths of large rivers by two or more diverging branches.

Deluge, a general overflowing of water, or inundation; specifically, the general inundation or flood in the time of Noah. The great flood or cataclysm by the scriptural story stated to have been sent in punishment of flagrant sins committed by the antediluvians, all of whom were drowned with the exception of Noah, his wife, his three sons, Japheth, Shem, and Ham, with their three wives, in all eight persons, who were saved in an ark which the patriarch was commanded to build.

Deluge Tablet, or **Deluge Tablets,** the name given to a tablet or tablets (the 11th of the Izdubar Legends) inscribed with cuneiform writing, which being translated were found to contain the Chaldean account of the deluge.

Delundung, the weasel-cat; a small quadruped inhabiting the vast forests of the E. extremities of Java and Malacca. It is of pale yellowish-white color, with elegantly-marked stripes and bands of a deep brown. It is allied to the civets, but is destitute of a scent-pouch.

Demagogue, a ringleader of a faction, or of the rabble; a popular or factious orator; a party leader; a teacher of sedition. In its original acceptation, this word was considered an honorable designation; but it is now almost invariably used in a bad sense.

Demand and Supply, in political economy, demand has reference to the quantity of goods asked for in the market, and supply has reference to the quantity of goods offered. The laws of demand and supply may be thus stated: when the demand exceeds the supply, competition grows stronger among the buyers, and prices rise, and when the demand falls short of the supply, competition grows stronger among the sellers, and prices fall. A rise in prices tends to encourage production, while a fall in prices tends to discourage it. The result is that demand and supply continually tend to equilibrium. Under such a system it is assumed that buyers and sellers or producers and consumers are free to fix their own prices. In other words, the laws of supply and demand prevail under a system of free competition.

Demeter, a Greek deity, representing the maternal or fertilizing principle in nature. Called Ceres by the Romans.

Deme, a subdivision of ancient Attica and of modern Greece. The word demos early came to be applied to the commons, and survives significantly in our democracy and demagogue.

Dementia, in common parlance and even in legal language a word synonymous with insanity. Medically it is applied to those cases of unsound mind which are characterized by a total loss of the faculty of thought, or by such an imbecility of intellect that the ideas are extremely incoherent, there being at the same time a total loss of the power of reasoning.

Demesne, or **Domain,** in law, a manor-house and the land adjacent or near, which a lord keeps in his own hands or immediate occupation, for the use of his family, as distinguished from his tenemental lands, distributed among his tenants.

Demidov, or **Demidoff,** a wealthy and influential Russian family, whose head was an armory-founder at Toula. This Demidoff was intrusted by Peter the Great with the business of casting the cannon for that prince's numerous warlike expeditions. He actively seconded all the exertions of the czar, and in 1725 discovered the mines of Kolyvan, the working of which speedily enriched him. He left a son, NITIKA, and several grandsons, who distinguished themselves in the same career as their progenitor, and amassed colossal fortunes. The best known of these are PROKOP DEMIDOFF, who worked with great profit the iron, copper, and gold mines of the Ural Mountains; born at Moscow about 1730; NIKOLAI NIKITICH, a zealous philanthropist, who introduced into his country several branches of industry, founded establishments of public utility, and carried to a great state of perfection the working of mines. He had an annual income of more than $1,000,000. His last years he passed in France and Italy, enjoying the society of learned men, and heaping benefits on all around him. Born near St. Petersburg, 1773; died in Florence, 1828. He left two sons, PAUL and ANATOLE, who, as well as inheriting his fortune, had also the same high taste and benevolence.

De Mille, Henry Churchill, an American playwright; born in North Carolina, about 1853; was graduated at Columbia College, and was by turns preacher and teacher till 1882, when he became examiner of plays at the Madison Square Theater, and later for a short time an actor. He died in Pompton, N. J., Feb. 10, 1893.

De Mille, James, a Canadian novelist; born in St. John, N. B., August, 1837; graduated at Brown College in 1854. He was Professor of History and Rhetoric in Dalhousie College, Halifax, from 1865 until his death. Died in Halifax, N. S., Jan. 27, 1880.

Demi-monde, an expression first used by the younger Dumas in a drama of the same name (first performed in 1855), to denote that class of female adventurers who are only half-acknowledged in society; popularly, disreputable female society; courtesans.

Demise (a laying down), in law, a grant by lease; is applied to an estate either in fee-simple, fee-tail, or for a term of life or years. As applied to the crown of England, demise signifies its transmission to the next heir on being laid down by the sovereign at death.

Democracy, that form of government in which the sovereign power is in the hands of the people collectively, and is exercised by them either directly or indirectly through elected representatives or delegates.

Democratic Party, one of the two chief divisions into which the voters of the United States are politically associated, first opposed to the Whigs, then to the Republicans.

The Cleveland View.— The complete evolution of the Democratic party may be said to date from the accession of Andrew Jackson to the presidency, though its fundamental principles were enunciated by Thomas Jefferson. The political features of Jackson's administration were the opposition to the United States Bank, the denial of the right of any State to nullify the laws of Congress, and the excitement over the tariff question. In 1836 through the influence of Jackson, Martin Van Buren was elected President, and during his administration the prestige of the Democratic party began to wane. In 1837 the country went through a severe commercial panic. Credit, speculation and banking had been carried to extreme limits and disaster followed. For this state of affairs the administration was held responsible. The election of 1840 was a revolution and in the choice of General Harrison by the electoral vote of 234 to 60 the Democratic party, after an ascendency of its principles entailing 40 years of power, was forced to retire. But the Whig triumph was shortlived. General Harrison died one month after his inauguration and John Tyler, who had been nominated for Vice-President to conciliate Virginia, succeeded to the presidential chair. All his life he had held and advocated Democratic doctrines, especially the opposition to the United States Bank, a protective tariff, and internal improvements by the general government. On his accession he continued the cabinet of his predecessor, Daniel Webster being Secretary of State; but after two successive vetoes of the "Fiscal Bank of the United States" bill, his cabinet left him, Mr. Webster remaining only till the conclusion of the Webster-Ashburton treaty, and his administration became essentially Democratic.

In 1844 James K. Polk was elected President, after a bitter and exciting contest, over Henry Clay. The annexation of Texas, which was urged by the Democratic party, was the great question in determining this election, and was accomplished March 1, 1845, three days before the inauguration of Mr. Polk. This led to a war with Mexico, which was declared May

12, 1846. At its successful conclusion not only was the Rio Grande established as the boundary of Texas, but all New Mexico and Upper California were relinquished to the United States. In March, 1820, an act known as the Missouri Compromise had been passed, forbidding the introduction of slavery in any of the States formed from the Louisiana Cession N. of 36° 30′. On Aug. 8, 1846, the rejection of the so-called Wilmot Proviso by the Senate, which provided "That as an express and fundamental condition to the acquisition of any territory from the Republic of Mexico by the United States . . . neither slavery nor involuntary servitude shall ever exist in any part of said territory," became the starting-point of the Free Soil party in 1848. Mr. Wilmot, the mover, was a Democrat. The popularity of General Taylor caused the defeat of Lewis Cass in the election of 1848, and the Democratic party went out of power till 1853, when Franklin Pierce became President. In 1856 it elected James Buchanan President and John C. Breckenridge Vice-President. At the convention held in Charleston, S. C., April, 1860, the slavery issue caused a disruption of the party, the slave section nominating John C. Breckenridge, and the free, Stephen A. Douglas, and, on Mr. Lincoln's election, it lost the supremacy which it had held with little interruption for 60 years. It had, however, a vigorous life, and contested hotly every presidential election, its unsuccessful candidates being George B. McClellan, 1864; Horatio Seymour, 1868; Horace Greeley, 1872; Samuel J. Tilden, 1876; and Winfield S. Hancock, 1880. In 1884 the party elected its candidate for the presidency, Grover Cleveland. In 1888, Mr. Cleveland having been renominated, the party was defeated. In 1892 Mr. Cleveland again became the nominee of the party against the sharp and critical opposition of the Democratic organization of his own State (New York). In the nominating convention the solid vote of New York, under the unit rule, was cast for Mr. Hill, then United States Senator, against Mr. Cleveland; but the West, the South, and largely New England voted for the latter.

In the first year of his second administration Mr. Cleveland called a special session of Congress for the purpose of repealing the law compelling the monthly purchase of silver by the government; and this was accomplished against the determined opposition of many prominent Democrats. Dissensions soon therefore arose in the party over the tariff, centering around the so-called Wilson Bill. The opponents of the administration, led by Gorman of Maryland, Brice of Ohio, and others, succeeded in amending the bill to an extent deemed so undemocratic that the President could give it but a qualified approval, and it became a law without his signature. The necessity of issuing bonds for the purpose of maintaining the gold reserve, thus increasing the public debt, and the adoption of silver free coinage in the platform of 1896 overthrew the party, its candidate, William J. Bryan, being defeated by William McKinley, for whom many Democrats in favor of sound money and the gold standard voted.

GROVER CLEVELAND.

The Bryan View.— Some of the claims of the so-called Free Silver Wing of the Democratic party were thus formulated in an article by William J. Bryan in the "North American Review," in 1900, and are here reproduced with that gentleman's permission. Mr. Bryan wrote:

"The Declaration of Independence set before the world four great truths which were declared to be self-evident: first, that all men are created equal; second, that they are endowed with inalienable rights, among which are life, liberty and the pursuit of happiness; third, that governments are instituted among men to secure these rights; fourth, that governments derive their just powers from the consent of the governed.

"Upon these four pillars, quarried from the mountain of eternal truth, all free government must forever rest.

"Then followed the War of the Revolution, with its sacrifices and its sacred memories, with its trials and its triumphs, establishing a government dedicated to liberty.

"But before a generation had passed, wealth, represented by Hamilton, began to assert itself, and contempt for the rights of man and distrust of the people themselves began to be manifest. Jefferson, the author of the Declaration of Independence, undertook the task of arousing the friends of human rights and civil liberty, and he led them to victory in 1800. The impetus given to American Democracy by its first success in the forum of politics carried it through several presidential terms.

"During Jackson's administration another battle was fought between the capitalistic classes and the people at large. The National bank marshalled an almost irresistible army of financiers, business men, newspapers and politicians in defense of a gigantic monopoly.

"Jackson sounded the alarm, rallied the hosts of Democracy, and, in a contest seldom, if ever, equalled in bitterness, won the second peaceful victory for human rights against inhuman greed. . . .

"For many years after the close of the Civil War the Republicans held undisputed control of the Federal government, and an appeal to the prejudices and passions aroused by that great conflict was sufficient answer to any criticism or complaint coming from the party out of power. During this period class legislation became the order of the day, and wealth not only sought favors from the government but secured exemption from just burdens. When war taxes were to be reduced, the taxes bearing upon the rich were taken off first. When the income tax was repealed, Senator Sherman of Ohio, placed his protest on record.

"High duties were placed upon the necessities of life on the ground that infant industries required assistance, with the result that the owners of the aided industries grew rich, while home-owning decreased and tenancy increased among the consumers.

"Railroads were constructed upon a plan which permitted watered stock, fictitious capitalization and the over issue of bonds, with the result that the patrons of the roads became the victims of extortionate rates and the manipulators of the roads became suddenly and enormously rich.

"Under the euphonious plea that public credit would be strengthened thereby, the terms of government contracts were altered in the interest of the bondholders. Then, in 1873, a change was made in the standard money, a change so indefensible that nearly every public man denied any knowledge of the purpose of the act. For 23 years following the passage of that act every party pledged itself to restore the double standard, but the financiers succeeded in controlling the dominant party and thus maintained the gold standard in spite of popular protest.

"In 1896 the Democrats refused to be any longer parties to the duplicity and took an open and unequivocal position in favor of the immediate restoration of bimetallism by the independent action of this country at the present legal ratio. This positive and definite platform was necessary because of the cunningly devised evasions and ambiguities which had been written into the platforms of the two leading parties. The Republican leaders, on the other hand, continued their policy of deception, and held out to the Republican bimetallists of the West the delusive hope of an international agreement, while they openly promised the Eastern believers in monometallism that the gold standard would be maintained until an international agreement could be secured, and secretly assured them that they meant forever.

"After the election the administration adopted a double standard method of dealing with the subject. A commission was sent to Europe to plead for international bimetallism, while a gold standard Secretary of the Treasury was openly at work in this country defending monometallism. In 1896 the money question occupied by far the greater portion of public attention. Since 1896 the same sordid doctrine that manifested itself in the gold standard has manifested itself in several new ways and today three questions contest for primacy — the money question, the trust question and imperialism. There are several other questions of scarcely less importance, but the lines of division upon these run practically parallel with the lines which separate the people upon the three greater ones. If a man opposes the gold standard, trusts, imperialism — all three — the chances are a hundred to one that he is in favor of arbitration, the income tax and the election of United States Senators by a direct vote of the people, and is opposed to government by injunction and the black-list. If a man favors the gold standard, the trust and imperialism — all three — the chances are equally great that he regards the demand for arbitration as an impertinence, defends government by injunction and the black-list, views the income tax as a 'discouragement to thrift' and will oppose the election of Senators by the people as soon as he learns that it will lessen the influence of corporations in the Senate. When a person is with the Democrats on one or two of these questions but not on all, his position on the subordinate questions is not so easily calculated."

WILLIAM J. BRYAN.

Democritus, a Greek philosopher of the new Eleatic school, a native of Abdera, who was born between 470 and 460 B. C. In his ethical philosophy Democritus considered the acquisition of peace of mind as the highest aim of existence. He is said to have written a great deal; but nothing has come to us except a few fragments. He died 370 B. C., at an advanced age. His school was supplanted by that of Epicurus.

Demoiselle, a species of crane. It is of a slaty-gray color, with the outer portion of the quill-feathers dingy black; a tuft of feathers from the breast blackish. It is found all over Africa, whence it finds its way occasionally to Europe and India. It is called also the Numidian crane.

Demon, a name given by the ancient Greeks to beings equivalent to those spiritual existences termed angels in the Bible. The word in Scripture is translated devil, but it meant properly a spirit generally, whether good or evil.

Demonology, the doctrine that relates to demons, a body of spiritual beings inferior in rank to deities proper, but yet capable of influencing human affairs.

De Morgan, Augustus, an English mathematician and logician; born in Madura, in Southern India, 1806. He died March 18, 1871.

Demosthenes, a famous orator of Greece; the son of a sword-cutler in Athens, where he was born in 382 (according to some in 385 B. C.) An unyielding patriot, he resolutely opposed the destruction of Grecian liberties by Macedonia, and when there was no longer hope for his country, he took poison. He died, according to the general account, in 322 B. C., at the age of 60 or 62 years.

Demulcents, medicines which tend to soothe or protect the mucous membranes against irritants. They are generally composed of starch, gum, albuminous or oily substances largely diluted.

Demurrage, in maritime law, (1) the time during which a vessel is detained by the freighter beyond what is named in the charter-party in loading or unloading. A vessel thus detained is said to be on demurrage. (2) The compensation or allowance made by the freighter of a vessel for such delay or detention. Demurrage must be paid in every case except when the delay is caused by tempestuous weather, any fault of the owner, captain, or crew of the vessel, or detention by an enemy. The word is also applied to a similar compensation or allowance payable for delay in loading or unloading railway cars beyond a certain specified period allowed for the purpose.

Demurrer, in law, a stop at some point in the pleadings, and a resting of the decision of the cause on that point; an issue on matter of law. A demurrer confesses the fact or facts to be true, but denies the sufficiency of the facts in point of law to support the claim or defense.

Denarius, a Roman silver coin, originally of the value of 10 asses or pounds of copper; but afterward of 16 asses, when the weight of the as was reduced to one ounce in B. C. 217. It was equivalent to about 16 or 17 cents of United States money. The name was also given to gold coin struck during the empire. It passed for 25 silver denarii.

Denby, Charles, an American diplomatist; born in Mt. Day, Va., in 1830. He was educated at Georgetown University and Virginia Military Institute and became a lawyer. Having served through the Civil War and attained the rank of colonel, he resumed the practice of law. He was appointed Minister to China in 1885 and served for 13 years in Peking. In 1898 he was made a member of the commission to investigate the conduct of the war with Spain, and in 1899 a member of the Philippine Commission. During the war between China and Japan the Japanese government placed its interests in China in his care.

Dengue, a continued fever common in the United States and in the East and West Indies, and Africa. The chief symptoms are severe pains in forehead, limbs, back, and joints, with an eruption like measles, or rather erysipelas, with painful swellings. The pains are of an agonizing character, and are apt to recur. The acute stage lasts seven or eight days, and then desquamation begins.

Denis, or Denys, St., first Bishop of Paris, in the 3d century. He was sent from Rome, about A. D. 250, to convert the pagans of Gaul. He built many churches, and selected Paris as the seat of his bishopric. During the persecution of the Christians under Aurelian, he was condemned to death by the Roman governor Pescennius, and beheaded in 272.

Denis, St., a town of France, in the Department of Seine, 6 miles N. of Paris. A chapel in honor of St. Denis was founded at this place, in 250. Dagobert I. founded the abbey in 636, and was buried here in 638, and it has ever since been the place of sepulture for the French monarchs. The first church was finished in 775, and the present edifice, commenced in 1130, was completed in 1281. A battle between the Roman Catholics and the Huguenots was fought in its vicinity, Nov. 10, 1567, when the latter were victorious, De Montmorenci, the Roman Catholic leader, being mortally wounded. By a decree of the Convention, Aug. 6, 1793, the royal tombs were opened, but they were restored by Napoleon I. in 1806. The abbey was suppressed in 1792. Pop. (1900) est. 52,000.

Denison, Charles Wheeler, an American poet and prose-writer; born in New London, Conn., Nov. 11, 1809; died Nov. 14, 1881.

Denison, John Ledyard, an American historian; born in Stonington, Conn., Sept. 19, 1826.

Denison, Mary (Andrews), an American novelist, wife of Charles W.; born in Cambridge, Mass., May 26, 1826. Assisted in editing the "Olive Branch," in which her husband was interested; also contributed to American and English periodicals.

Denison University, an educational institution in Granville, O.; founded in 1831, under the auspices of the Baptist Church.

Denman, Thomas, Baron, an English jurist; born in London, Feb. 23, 1779; graduated at Cambridge; and entered Lincoln's Inn in 1806. He succeeded Lord Tenterden as Lord Chief-Justice of England in 1832; and was raised to the peerage in 1834. He retired from the bench in 1850, and died Sept. 22, 1854.

Denmark, a kingdom of Northern Europe. It is composed of a peninsular portion, and an extensive archipelago, lying E. of it, with a few scattered islands on its W. side. The peninsular portion is composed of Jutland, and measures, N. to S., 185 miles, with a breadth varying from 40 miles to 108 miles. Besides these territories, Denmark possesses the Faroe Islands and Iceland, in the North Atlantic Ocean, and Greenland, in the Arctic regions, also the Danish West Indies.

For administrative purposes Denmark is divided into 18 counties, each county being subdivided into Herreder or hundreds. Copenhagen is the capital, and among the towns of importance are Aarhuus, Odensee, and Aalborg. The total area is 15,360 square miles, and the total population is 2,464,770.

Denmark has no large rivers. Intercourse between the various islands and parts of the kingdom separated from each other by water is necessarily kept up by means of water communication, regular ferries being established at numerous points. Denmark is well supplied with excellent seaports, the most important being Copenhagen, Aalborg, Aaarhus, and Randers.

Horses and cattle are reared in great numbers, and both are excellent. Large flocks of sheep are kept; but rather for the flesh than the wool, which is coarse and short. Swine are also reared to a great extent. Although not particularly favored by nature, Denmark is yet preëminently an agricultural country. The land is greatly subdivided, as the law interdicts the union of small farms into larger, and encourages the division of landed property. The kinds of grain most largely cultivated are barley, oats, rye, and wheat, the greatest area being occupied by oats, the second by barley. The fisheries were formerly a more important branch of national industry than now. Two causes have contributed to this result — the extension of agricultural pursuits and the decay of the herring fishery which has fallen off greatly within the last 40 years.

Education is very generally diffused, and the fondness for reading which prevails is attested not only by the great number of parochial and other associations for the purpose of procuring works in the various branches of literature and lending them out among the members, but also by the number of books which individuals in the humblest walks of life, both in town and country, manage to collect for their own private use. The Danish is a Teutonic or Germanic language, and as such is related to the Swedish, Norwegian, German, Dutch, and English.

By a charter finally adopted by the king and diet, June 5, 1849, it is declared that the executive power is in the king alone, the legislative in the king and diet jointly. The person of the king is inviolable, but he rules by a responsible ministry. The diet consists of the Landsthing and the Volkething — the former a kind of senate or upper house, and the latter a house of representatives. The Landsthing consists of 66 members, of whom 12 are nominated for life by the crown, and the rest elected indirectly by the people for the period of eight years. The Lutheran is the established religion, and the king is required by law to be a member of that denomination; but unlimited toleration is extended to every sect, including the Jews, who by a decree of March 29, 1814, were admitted to an equal participation of civil rights, in regard to the exercise of trades, etc., with the other subjects of the State; but, though electors, they cannot themselves be elected as representatives of any class. The bishops of the church are nominated by the crown.

The army of Denmark in 1900 had a peace strength of fully 824 officers and 8,945 men, and the total war strength is fully 60,000 men. According to a law passed in 1867 the army consists of all the able-bodied young men of the kingdom who have arrived at the age of 22 years. The time of service is eight years in the regular troops and the first reserve, besides another eight years in the extra reserve. The navy contains about 13 ships from third-class cruisers upward, the largest being the turret-ship "Heligoland." The navy is mainly for coast defense, and is manned by 1,337 men and 285 officers.

Dennewitz, a small Prussian village in the circle of Potsdam, province of Brandenburg, famous for the battle between the French and Prussians, Sept. 6, 1813, in which the latter, aided toward the end by Russian and Swedish armies, were victorious.

Dennison, William, an American statesman; born in Cincinnati, O., Nov. 23, 1815. He was graduated at Miami in 1835 and became a lawyer, being elected to the Ohio Legislature in 1848. He became governor of Ohio in 1860, and rendered invaluable aid to the Union cause throughout the Civil War. President Lincoln appointed him Postmaster-General in 1864, an office he retained under President Johnson, resigning in 1866. Dennison College owes much to his liberality. He died in Columbus, June 15, 1882.

Densimeter, an instrument contrived by Colonel Mallet, of the French army, and M. Bianchi, for ascertaining the specific gravity of gunpowder.

Density, a term denoting the quantity of matter per unit of volume of a body.

Dentistry, the art of cleaning and extracting teeth, of repairing them when diseased, and replacing them when necessary by artificial ones. There are two very distinct branches of the art now recognized, one being dental surgery, the other what is known as mechanical dentistry. The first requires an extended medical knowledge on the part of the practitioner, as, for instance, a knowledge of diseases the effects of which may reach the teeth, of the connection between the welfare of the teeth and the general system, etc., as well as ability to discern latent oral diseases, calculate the effects of operations, etc. The chief operations in this department are scaling, or removing the tartar which has accumulated on the base of the teeth; regulating, the restoring of overcrowded and displaced teeth to their proper position; stopping or stuffing, the filling up of the hollow of a decayed tooth and thus preventing the progress of decay; extracting, a process requiring considerable muscular power and delicacy of manipulation.

The second department, mechanical dentistry, is concerned with the construction of artificial substitutes for lost teeth, and requires much mechanical science. In the United States the Baltimore College of Dental Surgery is the oldest, its charter being dated 1839; the Ohio College of Dental Surgery followed in 1845, and various others. The "American Journal and Library of Dental Science" was established in Baltimore in 1839. Every State has now its State Dental Society; besides national organizations, of which the American Dental Association is among the most important.

Dentition, an organic process, including both the formation and the cutting of the teeth, accompanied by a kind of disturbance of the general functions of the body. It is most marked in the cutting of the temporary teeth by children. In the second dentition the disturbance is more rare and less visible. Even the cutting of wisdom teeth is sometimes accompanied with general morbid symptoms.

D'Entrecasteaux Islands, since 1884 part of the British protectorate of New Guinea, lie N. of the S. E. extremity of New Guinea. With an area of 1,083 square miles, they comprise three chief islands separated by narrow channels. They are named after the French admiral and explorer, Bruni D'Entrecasteaux (1739–1793), who visited these waters in 1792.

Denver, a city, capital of the State of Colorado, and county-seat of Arapahoe co., at the junction of the South Platte river and Cherry creek. The city is built on a series of plateaux, and has a climate peculiarly mild and adapted to people suffering from pulmonary troubles. Area 50 square miles. Denver is the headquarters of the mining and manufacturing interests of the State, and has the largest smelting works in the world. The city is the metropolis of the Middle West, and on account of its rapid growth and fine buildings is popularly known as the "Queen City of the Plains." The schools of Denver are of the first class, and include 46 public day schools, with over 500 teachers, and 13,500 pupils, and about 15 parochial and other private schools. There are also 21 colleges, academies, and asylums in the city. The first settlements were made in 1857. The place was originally known as St. Charles. It received its present name from James W. Denver, of Kansas, who at one time owned nearly all the State. The State Legislature first met here in 1859, in which year the city received its charter. The first railroad connection between Denver and the rest of the country was made in 1868, when the Denver Pacific was united to the Union Pacific, at Cheyenne. Pop. (1890) 106,713; (1900) 133,859.

Denver, The, a twin-screw, steel sheathed, protected cruiser of the United States navy.

Denver, University of, a co-educational institution in Denver, Colo.; founded in 1864 under the auspices of the Methodist Episcopal Church.

Deodand, a personal chattel, which had been the immediate cause of the death of any person, as if a horse struck his keeper and so killed him (a term once used in English law). In these and such cases that which caused the death was to be given to God — that is, forfeited to the crown — to be sold or otherwise disposed of, and the proceeds applied to religious uses or charity. The right to deodands within certain limits was often granted by the crown to individuals. Deodands were abolished in 1846. In the United States the term is applied to instruments of crime preserved in police stations and other public places.

Deodar, a large tree, attaining to the height of 100 feet, a native of the Himalayas, and similar in habit of growth to the Cedar of Lebanon, of which it is thought by some to be only a variety.

Deodorizer, one who or that which deodorizes; specifically, any substance which has the power or quality of destroying any fetid, infectious, or noxious effluvia, such as chloride of lime, carbolic acid, etc.

Department, a term used to denote a territorial division in France. Previous to the Revolution, France was divided into provinces; but in 1790 a decree of the Assembly ordered the abolition of the old provincial divisions (34 in number), and the redistribution of the land into departments, of which there are now 87. The departments, each presided over by a prefect, are again subdivided into arrondissements.

Departments, in the United States, branches of the executive administration of the Federal government, each under the immediate direction of a secretary, who is a member of the President's "Cabinet." They are popularly known as the Departments of Agriculture, Interior, Justice, Navy, Post-office, State, Treasury, and War.

Department Store, a large establishment for the sale of merchandise, of a miscellaneous character, at retail. They have reached vast proportions in the leading cities of America, some of them supplying every requisite for a household.

De Pauw, Washington Charles, an American manufacturer; born in Salem, Ind., Jan. 4, 1822; noted for his extensive gifts in behalf of education. His aid to the Indiana Asbury University set it upon a sound basis, and its name was changed to De Pauw University in his honor. He also founded De Pauw College for Women and several charitable institutions at New Albany, Ind., where he died, May 5, 1887.

Depew, Chauncey Mitchell, an American lawyer; born in Peekskill, N. Y., April 23, 1834; was graduated at Yale College in 1856, engaged in the presidential campaign for Fremont immediately afterward; studied law, and was admitted to the bar in 1858. He was appointed United States Minister to Japan, and after holding the commission a month declined, and began his career as a railroad official as attorney for the New York and Harlem Railroad. He was made attorney and director of the consolidated Hudson River and New York Central Railroads in 1869; general counsel of the whole Vanderbilt system in 1875; second vice-president of the reorganized New York Central Railroad in 1882, and president in 1885. His political career since 1866 embraces his unsuccessful candidacy as lieutenant-governor on the Liberal Republican ticket in 1872; his election by the Legislature as a regent of the State University in 1874; his candidacy for United States Senator to succeed Thomas C. Platt, in which he withdrew his name after 82 days of balloting in 1881; his declination of the United States senatorship tendered by the Republicans of the Legislature in 1884; his candidacy for the presidential nomination in the national convention in 1888; and his election to the United States Senate Jan. 17, 1899. He has an international reputation as an unusually entertaining speaker, is constantly in request as a lecturer, and has delivered many addresses of large public importance.

De Peyster, Arent Schuyler, a Royalist military officer; born in New York city, June 27, 1736; a grandson of Col. Abraham Schuyler and nephew of Col. Peter Schuyler. When 19 years old he enlisted in the 8th Foot Regiment for service in the war with France, and was on duty with his uncle at various important posts. In the Revolutionary War he was a colonel in the Royal army; was at different times in command of the British posts of Detroit, Mackinac, and elsewhere in Canada; and by his influence among the Indians of the Northwest converted them from enemies to friends of the British cause. After the war he retired to Dumfries, Scotland, and enlisted and drilled a regiment of local volunteers, which included Robert Burns, during the French Revolution. He died in Dumfries in November, 1832.

De Peyster, Johannes, a New York merchant; born in Haarlem, Holland, in 1600; was one of the early settlers of New York; and became prominent in public affairs during the Dutch possession. He died in New York about 1685.

De Peyster, John Watts, an American miscellaneous writer; born in New York city, March 9, 1821. He has contributed much to periodicals, and written a vast number of monographs, often polemic,— one being in defense of his Loyalist grandfather, second in command at King's Mountain on the British side.

Depilatories, (I pull out the hair), chemical agents employed for removing superfluous hair from the skin. They were extensively used by the ancients, but are now restricted in their employment to the face, and to the removal of the hair from the scalp in the treatment of certain diseases.

Deponent, a person who makes a deposition.

Deposit, in law, something given or intrusted to another as security for the performance of a contract, as a sum of money or a deed. In commerce, a deposit is generally either money received by banking or commercial companies with a view to employing it in their business, or documents, bonds, etc., lodged in security for loans.

Deposit, in geology, a layer of matter formed by the settling down of mud, gravel, stones, detritus, organic remains, etc., which had been held in suspension in water.

Deposition, the evidence or statement of a witness on oath or affirmation, signed by the justice or other duly authorized official before whom it is given; an affidavit.

Depot, a French word in general use as a term for a place where goods are received and stored; hence, in military matters, a magazine where arms, ammunition, etc., are kept. In the United States it is the common term for a railway station.

Depretis, Augustin, an Italian statesman; born near Stradella Jan. 31, 1813. In 1876 he was called to form a ministry himself, and while acting as president of the council and minister of finance he instituted many reforms in the government. In 1879 he resigned, and Carioli formed a government, but Depretis was again placed at the head of the council in 1885, and remained there until his death, July 29, 1887.

De Profundis, in the liturgy of the Roman Catholic Church, one of the seven penitential psalms, the 130th of the Psalms of David, which in the Vulgate begins with these words, signifying, "Out of the depths." It is sung when the bodies of the dead are committed to the grave.

Deputy, one who exercises an office as representing another. Chamber of Deputies: the lower of the two legislative chambers in France and in Italy, elected by popular suffrage.

De Quincey, Thomas, an English author; born in Manchester, Aug. 15, 1785. He received a classical education at the grammar school of Bath, and entered the University of Oxford in 1803, where he remained till 1808. While there he contracted the habit of eating opium, to which he remained a bounden slave for many years. The consequences were fearful, as he himself relates in his principal work, "The Confessions of an English Opium-eater." He was a very prolific writer; but his works are mostly occasional essays, and papers on historical, literary, and miscellaneous topics. He died in Lasswade, near Edinburgh, Dec. 8, 1859.

Derajat, the fluvial portion of Daman, itself a comparatively narrow strip in the Punjab, India, between the Sulimen mountains and the Indus, and which when duly irrigated, is singularly fertile. It is divided into four districts and has an area of 20,300 square miles, and a population (1891) of 1,643,600.

Derbend, or **Derbent,** ("gateway"), a port and capital of the Russian district of Daghestan, on the W. shore of the Caspian, 140 miles N. W. of Baku. Derbend was long considered the key of Persia on the N. W. side. It was captured by the Arabs in 728, by the Mongols in 1220, and frequently changed hands before it was formally incorporated with Russian Caucasia in 1813.

Derby, the capital of Derbyshire, England, a great manufacturing center, and one of the oldest towns in the kingdom, and is supposed to owe its origin to a Roman station, Derventio, situated at Little Chester, on the opposite side of the river. Pop. (1901) 105,785.

Derby, Edward Geoffrey Smith Stanley, 14th Earl of, an English statesman; born in Knowsley Park, Lancashire, March 29, 1799. In 1841 he became colonial secretary under Sir Robert Peel, but resigned on Peel's motion for repeal of the corn-laws. In 1851 and 1858 he formed ministries, and again in 1866. Early in 1868 he resigned office. Earl Derby joined to great ability as a statesman and brilliant oratorical powers a high degree of scholarly culture and literary ability. He died Oct. 23, 1869.

Derby, Henry Stanley, fifteenth Earl of Derby, was born in 1826; educated at Rugby, and Trinity College, Cambridge. In 1866 and also in 1874 he was secretary of state for foreign affairs. Lord Derby became a Liberal in 1879, and was secretary of state for the colonies under Mr. Gladstone from 1882 to 1885. He, however, took a stand against Irish Home Rule in 1886, and afterward ranked among Mr. Gladstone's opponents. He died April 21, 1893.

Derby, George Horatio, (pen name, "John Phœnix"), an American humorist; born in Dedham, Mass., April 3, 1823. He died in New York, May 15, 1861.

Derby Day, the name given to two days of the racing season among English-speaking peoples: (1) The day on which the English Derby is run. (2) The grand inauguration day of the summer season at Washington Park, Chicago, on which day the American Derby is run.

Derelict, a vessel or anything relinquished or abandoned at sea, but most commonly applied to a ship abandoned by the crew and left floating.

De Reszke, Jean, a Polish singer; born in Warsaw, Jan. 14, 1852. He has sung in Wagner roles in New York and London. His brother, EDWARD, born in Warsaw, Dec. 23, 1855, is a popular bass singer of dramatic rôles, making his dêbut in 1876 as the king in "Aida."

Derg, Lough, the largest lake expansion of the river Shannon, between Tipperary and Galway and Clare, in Ireland; is 24 miles long, with an average width of two miles; greatest depth, 80 feet. Its surface is about 100 feet above the sea. Another Lough Derg, in the S. of Donegal co., is 3 miles by 2½, has many small isles and rocks, and wild, dreary shores.

Dermatology, that branch of science which treats of the skin and its diseases.

Dermestes, a common genus of beetles, including several species of formidable voracity. The most familiar of these is often called the bacon beetle. In the open air it lives on dead animals, and is thus useful enough; but within doors it attacks bacon, cheese, dried meats, furs, cabinet collections, etc. The brown larvæ are equally voracious.

Dermot Mac Murragh, the last Irish King of Leinster, attained the throne in 1140. Having carried off the wife of O'Ruarc, Prince of Leitrim, he was attacked by the latter, and after a contest of some years driven out of Ireland (1167). He then did homage to the English king, and with the help of Richard, Earl of Pembroke, recovered his kingdom, but died in the same year (1170), and was succeeded in Pembroke, who had married his daughter.

Dernburg, Friedrich, a German descriptive writer; born in Mentz, Oct. 3, 1833. After a university course he rapidly acquired eminence in both journalism and politics, being one of the companions of the German Crown Prince (now emperor) in a trip to Rome, and later a well-known personality at the Columbian Exposition.

De Rosny, Leon, a French Orientalist; born in Loos, France, Aug. 5, 1837. He became Professor of Japanese at the Special School of Languages in 1868, and founder of the International Congress of Orientalists.

Deroulede, Paul, a French poet; born in Paris, Sept. 2, 1846. His "Soldier Songs" (1872) and "Military Refrains" (1888) were immensely popular.

Derrick, a lifting apparatus consisting of a single post or pole, supported by stays and guys, to which a boom with a pulley or pulleys is attached, used in loading and unloading vessels, etc.

Derrick Crane, a kind of crane combining the advantages of the common derrick and those of the ordinary crane.

De Russy, Rene Edward, an American military officer; born in Haiti, W. I., Feb. 22, 1789. He was graduated at the United States Military Academy in 1812, serving with credit in the war with England. He subsequently supervised the construction of fortifications in New York harbor and the Gulf of Mexico. During the Civil War he was ordered to the Pacific coast, where he constructed defenses in San Francisco harbor. He died in San Francisco, Nov. 23, 1865.

Dervish, a Mohammedan monk or religious fanatic, who makes a vow of poverty and austerity of life. There are several orders, some living in monasteries, some as hermits, and some as wandering mendicants. Some, called dancing dervishes, are accustomed to spin or whirl themselves round for hours at a time, till they work themselves into a state of frenzy, when they are believed to be inspired.

DERVISH OF CAIRA.

Derwentwater, James Radclyffe, Earl of, one of the leaders in the English rebellion of 1715; born in London, June 28, 1689; was educated in France. He succeeded as 3d earl in 1705, on the death of his father. The history of the Earl of Derwentwater becomes the history of the rebellion of 1715 (see JACOBITES), which ended in the disastrous encounter at Preston, where Derwentwater was taken prisoner and conveyed to the Tower of London. Impeached of high treason at the opening of Parliament, he was brought to trial in Westminster Hall, when he pleaded guilty and threw himself on the mercy of the king. Every effort was made to obtain a pardon, all exertions were in vain, and he was beheaded on Tower Hill, Feb. 24, 1716. He is the hero of a touching ballad of the day, and of "Dorothy Forster," Mr. Besant's charming romance.

Desaguadero, ("channel" or "outlet"), the name of various waters in South America, of which the principal is the Rio Desaguadero in Bolivia, emptying its waters into Lake Aullagas. Also a river in the Argentine Confederation flowing into Lake Bevedero Grande, and separating the provinces of San Juan and Mendoza.

Desaix de Veygoux, Louis Charles Antoine, a French general; born in Auvergne, Aug. 17, 1768. He was one of the bravest generals of the great Napoleon, and was killed at the battle of Marengo, to which victory he principally contributed, June 14, 1800.

Desault, Pierre Joseph, a French surgeon; born near Macon, 1744. During the violence of the Revolution he was confined some time in the Luxembourg prison; but his usefulness saved his life. He died while attending the Dauphin, June 1, 1795, which induced a suspicion that he was dispatched because he would not poison that unfortunate prince.

Desbarres, Joseph Frederick Wallet, an English military engineer; born in England, of Huguenot parentage, in 1722, and in 1756 sailed as lieutenant in the 60th foot for America, where he raised, and for a time commanded, a corps of field artillery. In 1757 he gained a victory over the Indians who had captured Fort Schenectady; and at the siege of Quebec he was aide-de-camp to Wolfe, who was mortally wounded while Desbarres was making a report. He was lieutenant-governor of Cape Breton (1784–1804), and of Prince Edward Island (1805–1813), having attained the rank of colonel only in 1798. He died in Halifax, Nova Scotia, Oct. 24, 1824.

Descartes, Rene, (RENATUS CARTESIUS), a French philosopher; born in La Haye, Touraine, France, March 31, 1596. While pursuing his education in the Jesuits' school at La Fleche, where he studied philology, mathematics, and astronomy, his superior intellect manifested itself. After a variety of travels he remained in Holland where he composed most of his writings from 1629 to 1649, drew about him many scholars, and was engaged in many learned controversies, especially with theologians.

His celebrated system abounds in singularities and originalities; but a spirit of independent thought prevails throughout it, and has contributed to excite the same spirit in others. It has done much to give to philosophical inquiries a new direction and found many adherents.

Descartes loved independence; he nevertheless suffered himself to be persuaded to go to Stockholm on the invitation of Queen Christina, who was very desirous of his society. He died in that place Feb. 11, 1650.

Deseret, the name first adopted by the Mormons for what is now Utah. See MORMONS: UTAH.

Desert, a term generally used to designate an uninhabited place or solitude. In this sense it is equally applicable to the fertile plains watered by the Maranon, and to the wastes of Libya; but it is applied more particularly to the vast sandy and stony plains of Africa and Asia.

Deserter, in military affairs, an officer, soldier, or sailor who abandons the public service in the army or navy without leave. In the United States desertion from either service in time of war is punishable by death or otherwise, as a court-martial may adjudge.

Desiccation, the evaporation or drying off of the aqueous portion of bodies. It is practised with fruit, and many other matters. It is usually done by a current of heated dry air, and as such may be considered as distinguished from evaporators, so called, to which furnace heat or steam heat is applied.

Desmarres, Louis Auguste, a French oculist; born in Evreux, Sept. 22, 1810. He powerfully promoted the knowledge of the pathology and anatomy of the eye, and invented an ophthalmoscope now generally used. He died in Neuilly, Aug. 23, 1882.

De Smet, Peter John, an American missionary; born in Termonde, Belgium, Dec. 31, 1801. He came to the United States in 1821 and donned the Jesuit garb, proceeded immediately to the far West, where he established missions and schools among the Indian tribes. He died in St. Louis in May, 1872.

Desmoulins, Benoit Camille, a French revolutionist; born in Guise, Picardy, March 2, 1762. In 1793 he gave his vote for the death of the king. Having become closely connected with Danton and the party of opposition to Robespierre, and inveighing against the reign of blood and terror, he was arrested on the order of the latter on March 30, 1794, tried on April 2, and executed on the 5th.

De Soto, Bernardo, a Costa Rican statesman; born in 1854; elected president of the republic in 1887. Under his administration the finances of the country, disordered by Guardia, were placed on a secure footing, and the work of completing the interoceanic railway from Port Limon, on the Caribbean Sea, to San Jose, the capital, and thence to Punta Arenas, on the Pacific coast, was prosecuted.

De Soto, Fernando, a Spanish discoverer; born at Jeres de los Cavalleros, in Estremadura, about 1496, of a good but impoverished family; accompanied Pedrarias Davila to Darien in 1519; served on the expedition to Nicaragua in 1527; and afterward assisted Pizarro in the conquest of Peru; returning to Spain with a fortune of "an hundred and fourscore thousand ducats." Charles V. now gave him permission to conquer Florida at his own expense, and appointed him governor of Cuba; and in 1538 he sailed from San Lucar with a richly equipped company of 600 men, 24 ecclesiastics, and 20 officers. The fleet anchored in the bay of Espiritu Santo (now Tampa Bay) on May 25, 1539; the ships were sent back to Cuba, and the long search for gold was begun. For three years, harassed by hostile Indians, lured onward by reports of wealth that lay beyond, the ever-decreasing company continued their toilsome march over a route that cannot now be very clearly traced. In 1541 the Mississippi was reached and crossed, and the third winter was spent on Washita river. Returning to the Mississippi in the spring, De Soto, worn out by disappointments, died of a fever on its banks, in June, 1542; and that his death might be concealed from the Indians, his body, wrapped in a cloak, was lowered at midnight into the waters of the great stream he had discovered. In the following year his companions, reduced to half their original number, sailed down the river in seven frail boats, and finally reached the town of Panuco, Mexico.

Despoblado (desert), a treeless, uninhabited plateau, nearly 10,000 feet above the sea, on the Bolivian and Argentine frontier.

Dessalines, Jean Jacques, an emperor of Haiti; born in Africa about 1760; was a slave in 1791, when the insurrection of the blacks occurred in that island, but was set free along with the other slaves in St. Domingo in 1794. His talents for war, his courage, and unscrupulous conduct raised him to command in the insurrections of the colored people, and after the deportation of Toussaint L'Ouverture, and the subsequent evacuation of the island by the French, Dessalines was appointed governor-general for life with absolute power; and the year following (1804) was declared emperor with the title of Jacques I.; but his rule was savage and oppressive, and both the troops and the people, sick of his atrocities, entered into a conspiracy against him, and, Oct. 17, 1806, he was slain by one of his soldiers.

Dessau, a town of North Germany; capital of the Duchy of Anhalt; on the left bank of the Mulde, not far from its junction with the Elbe, 70 miles S. W. of Berlin. Pop. (1900) 50,851.

Desterro, a seaport of Brazil, capital of the province of Santa-Catharina. The harbor is, next to that of Rio de Janeiro, the best on the Brazilian coast.

Desuetude, in Scots law, that repeal or revocation of a legal enactment which is effected not by a subsequent contrary enactment, but by the establishment of a contrary use, sanctioned by the lapse of time and the consent of the community.

Detaille, Jean Baptiste Edouard, a French painter; born in Paris, Oct. 5, 1848. He is distinguished for his treatment of battles and military subjects. One of his best pictures, "The Passing Regiment," is in the Corcoran Art Gallery in Washington, D. C.

Detmold, capital of the German Principality of Lippe, on the Werre, 47 miles S. W. of Hanover. On a hill two miles from Detmold is a colossal statue of Arminius.

Detonating Powders, certain chemical compounds, which, on being exposed to heat or suddenly struck, explode with a loud report, owing to one or more of the constituent parts suddenly assuming the gaseous state.

Detritus, applied in geology to accumulations formed by the disintegration of rocks, may consist of angular and subangular debris, or of more or less water-worn materials, such as gravel, sand, or clay, or a mixture of these.

Detroit, city, port of entry, and county-seat of Wayne co., Mich.; on the Detroit river, about 18 miles from Lake Erie, and 4 miles from Lake St. Clair. It is the first city in population and importance in the State. It has a water front of 8 miles; steamship communication with the principal ports on the Great Lakes; and ferries to Windsor on the Canadian side. The city is defended by Fort Wayne, a mile below. The river at this point is known as the "Dardanelles of the New World," leading from one great lake to another and affording an excellent harbor. Area, 29 square miles; pop. (1900) 285,704. The street railway lines are operated by electricity, and there are 167 miles in the city limits, with nearly 220 miles more in operation or under construction for suburban traffic. Detroit has many magnificent public parks, and over $500,000 is expended annually for their maintenance. The largest and most beautiful is Belle Isle, an island of 700 acres at the entrance of Lake St. Clair. This park is an immense pleasure ground and offers all sorts of amusements. Palmer Park is also an ideal pleasure ground, covering an area of 132 acres. There are a number of smaller parks.

No city of its size in the country surpasses Detroit in the number, beauty, and substantial quality of its public and business buildings. Among the most noteworthy are the Chamber of Commerce, Majestic, Union Trust, Hammond, municipal buildings, County Court House, City Hall (a handsome structure in Italian style), the Postoffice, built at a cost of $2,000,000, Light Guard Armory, Art Museum, Central High School, and Masonic Temple. Near the Campus Martius is the Public Library, with 150.000 volumes. In front of the City Hall stands a magnificent Soldiers' and Sailors' Monument. Other points of interest are Fort Wayne, the Bagley Fountain, Evacuation Day Tablet, the old home of General Grant and relics of Perry's victory on Lake Erie.

Detroit is an extensive manufacturing and commercial city. Its system of schools is admirable, and there are 183 churches.

The site of Detroit was permanently settled by French colonists under De la Motte Cadillac in 1701, when Fort Pontchartrain was built as a defense against Indians. Owing to its great strategic importance it has never been without a military garrison since 1701. It has changed its flag five times; was at times under French and English dominion prior to the Revolutionary War; has owed allegiance to three different sovereigns; has been besieged by Indians twice; captured in war once; totally consumed by fire once; and has been the scene of 12 massacres and 50 battles. The English took possession of it in 1760, and erected (1778) Fort Lernoult, the site of which is now in the heart of the city. It was ceded to the United States by the peace of 1783, but possession was not taken till Gen. Anthony Wayne established himself here in 1796; General Hull surrendered it to the British in 1812; and the Americans regained possession after Commodore Perry's victory on Lake Erie, in 1813. The present city was laid out in 1806; incorporated as a city in 1815; and was the capital of the State in 1837-1847.

Detroit River, or **Strait of St. Clair,** a river or strait of North America, which runs from Lake St. Clair to Lake Erie. It is 28 miles long, and of sufficient depth for the navigation of large vessels. It is about three-fourths of a mile wide opposite Detroit and enlarges as it descends.

Dettingen, a village of Bavaria, on the Main, 10 miles N. W. of Aschaffenburg; is noted as the scene of a battle during the war of the Austrian Succession, when, on June 27, 1743, George II. of England, commanding English, Hanoverians, and Austrians, defeated the larger French army under the Duc de Noailles. This was the last time a king of England took the field in person.

Deus, Joao de, a Portuguese lyric poet; born in Sao Bartolomeu de Messines, in the Province of Algarve, March 8, 1830. He is regarded by his countrymen as introducer of a new era of Portuguese poetry. National spirit, originality, sensibility, and rhythmic melody characterize his poems.

Deuteronomy, the Greek name of the fifth book of the Pentateuch. It presents the third and latest phase of the development of the Mosaic legislation. Its great aim is to check the encroachments of idolatry, and to concentrate the national worship in the great sanctuary at Jerusalem, especially at the three annual festivals. It is filled with the prophetic spirit, and lays stress on the great commandment to love and fear God with the whole heart as the sum of the whole law.

Development, the gradual advance stage by stage of animal or vegetable bodies from the embryonic to the perfect state.

Development Hypothesis, in biology, a hypothesis or theory which contends that species were not each of them a separate creation, but by some process or other came from previous species, the only exception, if any, existing, being one or more primordial forms.

Devens, Charles, an American jurist; born in Charlestown, Mass., April 4, 1820. He was educated at Harvard and Cambridge; was United States marshal for the District of Massachusetts at the time when the case of Thomas Sims, a fugitive slave, attracted widespread attention. Devens delivered Sims to his master in accordance with the law, and afterward tried to purchase his freedom, but did not succeed till after the outbreak of the Civil War. He served in the Union army from 1861 to 1865, retiring with the full rank of Brigadier-General and the brevet rank of Major-General. In 1873 he was made Associate Justice of the Massachusetts Supreme Court; in 1877 became Attorney-General of the United States; and in 1881 resumed his place on the Supreme bench of his native State. He served one term as commander-in-chief of the G. A. R. He died Jan. 7, 1891.

De Vere, Sir Aubrey, an Irish poet; born in Curragh Chase, Aug. 28, 1788; died July 5, 1846.

De Vere, Aubrey Thomas, an Irish poet and descriptive and political essayist; born in Curragh Chase, Limerick, Jan. 10, 1814; son of Sir Aubrey; died in London, England, Jan. 21, 1902.

De Vere, Maximilian Schele, a noted philologist; born near Wexio, Sweden, Nov. 1, 1820; came to the United States in 1843; in 1844 became Professor of Modern Languages and Belles Lettres in the University of Virginia. His contributions to the leading magazines have been both literary and scientific.

Deviation of the Compass, the deviation of a ship's compass from the true magnetic meridian, caused by the near presence of iron. In iron ships the amount of deviation depends on the direction, with regard to the magnetic meridian, in which the ship lay when being built. It is least when the ship has been built with her head S. Wooden ships are also affected, though in a far less degree, by the direction in which they lie when building.

Devi, in Hindu mythology, "the goddess," or Mahadevi, "the great goddess," wife of the God Shiva and daughter of Himavit (that is, the Himalaya Mountains).

Devil, or **Satan,** names applied in the New Testament and in Christian theology to the supreme impersonation of evil, considered as possessing an objective existence outside of man, and placed at the head of a host of inferior evil spirits, whose continual occupation is to thwart the good purpose of God and the progress of His kingdom in the hearts of men. Other names merely suggest the same essential ideas of his nature and function, as the wicked one, the enemy, and the like.

Devilfish, the popular name of various fishes, one of them being the angler. Among others the name is given to several large species of ray occasionally captured on the Atlantic and Pacific coasts of America, and much dreaded by divers. During gales of wind or from strong currents these immense fish are driven into shoal water, and being unable to extricate themselves fall an easy prey to the vigilance of the fishermen, who obtain considerable quantities of oil from their livers.

Devil's Advocate, an official at the Vatican who urges such objections as may exist against the canonization of any individual whose name it is proposed to add to the calendar of saints.

Devil's Bridge, a famous bridge in Switzerland, over the Reuss, built of stone from mountain to mountain, 75 feet in length, on the road over St. Gothard, from Germany to Italy.

Devil's Island, (Isle du Diable), a small rock formation off the coast of French Guiana, belonging to France. The area is about 16 square miles, and the island itself is sandy, dry, and torrid. Here Capt. ALFRED DREYFUS was imprisoned for alleged treason.

Devil's Punch-bowl, a small lake of Ireland, near the lakes of Killarney, between 2,000 and 3,000 feet above the sea, supposed to be the crater of an ancient volcano.

Devil's Slide, a gorge of the Utah mountains, formed wholly by the natural arrangement of parallel crags and resembling an inclined plane. The accidental juxtaposition of two such boulder masses, accounted for by the simultaneous action of a cooling atmosphere on liquefied masses, is a feature of Utah scenery.

Devil's Wall, an interesting structure in the S. of Germany. This wall was originally a Roman ditch with palisades behind it. It was intended to protect the Roman settlements on the left bank of the Danube, and on the right bank of the Rhine, against the inroads of the Teutonic and other tribes. The wall extended for about 368 miles, over mountains, through valleys, and over rivers, running toward the Danube. Remains of it are found at present only from Abensberg, in Bavaria, to Cologne, in Rhenish Prussia, on the Rhine.

Devil Worship, a homage paid by primitive tribes to the devil or spirit of evil in the belief that he could be bribed from doing them evil. Devil worship is also practised by the Yezidees, a sect in Armenia numbering about 250,000.

De Vinne, Theodore Low, an American printer; born in Stamford, Conn., Dec. 25, 1828. He learned the printer's trade and became an employe and later partner of Francis Hart, upon whose death he founded the firm of Theodore L. De Vinne and Company in New York city. He has written many works on typography, including "Invention of Printing" and "Historic Types."

Devonian System, a name in geology originally given to the rocks of Devonshire and Cornwall, England. Devonian rocks occupy a large area in the United States, Eastern Canada, Nova Scotia, and Central Europe. In the United States they are found in New York and Pennsylvania, and include sand and limestone, used in building material. Devonian rocks appear in some regions of the Appalachian Mountains. In the middle part of Michigan, they surround the coal basin; and are also found in Kentucky, Indiana, Ohio, Illinois, Eastern Iowa, and Nevada. In Maine they are in a metamorphic condition. In the Upper Groups of the Devonian System they are carbonaceous shales, which by natural distillation give much of the petroleum of natural gas found in the sandstones of Pennsylvania and Eastern Ohio.

Devonport (before 1824 called PLYMOUTH DOCK), a parliamentary and municipal borough, maritime town, and naval arsenal, in the S. W. of Devonshire, England; two miles W. N. W. of Plymouth. It owes its existence to the dockyard established here by William III. in 1689, and is one of the chief naval arsenals in Great Britain.

Devons, the name given to a breed of cattle which were first bred in Devonshire, England. They are rather wild, of a dark-red color, and are smaller than Shorthorns or Herefords. They form a good deal of inside fat and firm meat. The cows yield a very rich milk, are hardy, and able to find food on poor lands.

Dew, a deposition of water from the atmosphere on the surface of the earth in the form of minute globules.

Dewberry, the dewberry of North America is a delicious fruit, much superior to the British fruit of the same name, and more tart. The plant is of very humble growth, scarcely rising above the ground.

De Wet, Christian, a Boer military officer; born in Dewetsdorf, Orange Free State (now Orange River State), about 1860. He was bred a farmer and made a small fortune. He became a member of the Volksraad. Though practically without military experience, he served ably in the Boer-British War of 1899–1900, attaining the rank of general and outwitting the pursuit of Kitchener and Roberts in the summer of 1900, and of the former in the early part of 1901. His stand at Sanna's Post was highly praised by military experts.

Dewey, Chester, an American educator; born in Sheffield, Mass., Oct. 25, 1784. He graduated at Williams College in 1806, where, in 1810, he became Professor of Mathematics and Natural Philosophy, a post he held 17 years. In 1836 he was appointed principal of the Collegiate Institute in Rochester, N. Y., and in 1850 became Professor of Chemistry and Natural Philosophy in the University of Rochester, resigning 10 years later. He was an authority on grasses. He died in Rochester, N. Y., Dec. 15, 1867.

Dewey, George, an American naval officer; born in Montpelier, Vt., Dec. 26, 1837. He came of New England stock, his father being Dr. Julius Y. Dewey, one of the first authorities on life insurance in his day, and a man held in high esteem in the business community. At the age of 17, after a preparatory course in the Northfield Military School, young Dewey was appointed a cadet at Annapolis, in the class which graduated in 1858. A practice cruise on the "Wabash" followed, and he was resting at home when the Civil War broke out. At once he was commissioned a lieutenant and assigned to the "Mississippi," a 17-gun steam-sloop of the old side-wheel type, under Commander Melanchthon Smith. His first serious taste of war was when the West Gulf squadron, early in 1862, forced a passage up the Mississippi river ahead of Farragut. A later enterprise resulted in the grounding of the "Mississippi," in the middle of the night, while attempting to run the batteries of Port Hudson. Here she was riddled with shot and set afire by the enemy's batteries, so that officers and crew had to abandon her, and make their way as best they could to the other shore before the flames reached her magazine and she exploded.

Other notable engagements in which Dewey figured during the Civil War were at Donaldsonville in 1863, where he was on one of the gunboats, and at Fort Fisher in the winter of 1864–1865, as an officer of the "Agawam." Receiving his commission as lieutenant-commander in March, 1865, he served for two years on the "Kearsarge" and the "Colorado," and was then attached to the Naval Academy for two years more. In 1870 he was given command of the "Narragansett," and during his five years' charge of her rose to be a commander. He was then attached to the Lighthouse Board, and in 1882 took his next sea duty in command of the "Juniata," of the Asiatic squadron. On reaching his captaincy, in 1884, he took charge of the "Dolphin," one of the first vessels of the "new navy." From 1885 to 1888 he commanded the "Pensacola," then flagship of the European squadron; and this service was followed by a shore duty of considerable length, in the course of which he served as chief of the Bureau of Equipment at the Navy Department, and afterward on the Lighthouse Board for a second time. In 1896 he was promoted to commodore, and made head of the inspection board; and at the beginning of 1898 was given command of the Asiatic squadron, and the chance to distinguish himself.

With his squadron he left Mirs Bay, China, April 27, 1898, with orders to "capture or destroy the Spanish squadron," which was then supposed to be in Manila Bay, under command of Admiral Montojo. The squadron entered the channel of Manila at 11:30 P. M., Saturday, April 30, and early on Sunday morning, May 1, sank, burned or captured all the ships of the Spanish squadron in the bay, silenced and destroyed three land batteries, obtained complete control of the bay, so that he could take the city, the chief port of the Philippine Islands, at any time, and all without losing a single man, and having only nine slightly wounded. In recognition of this achievement, Commodore Dewey received the thanks of Congress, which awarded to him a magnificent sword, and medals to his men. As a further recognition of his achievement, Commodore Dewey was (May 7, 1898) promoted to be a rear-admiral, and subsequently (March 3, 1899) was made Admiral of the Navy under an act of Congress, approved March 2, 1899, restoring that rank for the especial purpose of enabling the country to adequately honor the hero of Manila bay. In 1901 he was president of the Schley Court of Inquiry, and in 1902 was appointed commander-in-chief of the united squadrons and fleets mobilized for extraordinary manœuvres.

De Witt, Jan, Grand Pensionary of Holland, celebrated as a statesman and for his tragical end; was the son of Jacob de Witt, burgomaster of Dort, and was born in 1625 or 1632. He became the leader of the political party opposed to the Prince of Orange, and in 1652, two years after the death of William II., was made grand pensionary. In 1665 the war with England was renewed and conducted by De Witt with great ability till its termination in 1665. In 1672 Louis XIV. invaded the Spanish Netherlands and involved Holland in war. De Witt's popularity, already on the decline, suffered still further in the troubles thus occasioned, and he felt it necessary to resign his office of grand pensionary. At this time his brother Cornelius, who had been tried and put to torture for conspiring against the life of the young Prince of

Orange, lay in prison. Jan de Witt went to vist him, when a tumult suddenly arose among the people, and both brothers were murdered, Aug. 20, 1672.

Dexter, Henry, an American news agent; born in West Cambridge, Mass., March 14, 1813. He was educated in the common schools, and, after obtaining employment in various publishing houses, started for himself as a news agent and wholesale dealer. In 1864 he organized the American News Co. In September, 1903, his only son was assassinated on his estate in the Adirondacks, on account, it is supposed, of animosity aroused by the exclusion of woodmen and others from his domains. The tragedy called attention to the conversion into private estates by wealthy men of vast tracts of land formerly open to the public.

Dey, a title held by the rulers of Algiers, Tripoli, and Tunis. The name was also formerly given to elderly people, especially among the Janizaries.

De Young, Michael Harry, an American publisher; born in St. Louis, Mo., Oct. 5, 1848. He received a common school education and in 1865 established with his father the "Dramatic Chronicle," subsequently merged into the San Francisco "Chronicle." He was commissioner from California to the Paris Exposition of 1889, vice-president of the World's Columbian National Commission in 1892, and director-general of the California Midwinter Exposition of 1893. In the last named year he was made vice-chairman of the Republican National Committee.

Dhalak, an archipelago of the Red Sea, off the coast of Abyssinia. It contains nearly 100 rocks and islets, mostly uninhabited, clustering round the island of Dhalak el-Kebir, which is about 35 miles long by 30 broad.

Dhow, an Arab sea-going vessel, with one mast and a large, square sail. It is used for transporting merchandise and slaves.

Dhurra, or **Dourah,** Indian millet, after wheat the chief cereal crop of the Mediterranean region, and used by the laboring classes for food. Varieties are grown in many parts of Africa, one of them known as Kaffir corn.

Dhwalagiri, once supposed to be the highest peak of the Himalayas, but now ascertained to be at most only the third in point of altitude, has a height of 26,826 feet above the sea. It is in Nepal.

Diabetes, a constitutional disease produced by malassimilation in the stomach, liver, kidneys, or in the blood, specially marked by a very excessive discharge of urine, which is always saccharine, excessive thirst, and great bodily emaciation.

Diablerets, a remarkable mountain of the Bernese Alps, Switzerland, on the frontiers of Bern and Valais, with a height of 10,651 feet above the sea. The Diablerets, with their four main peaks, are composed of limestone strata, the lower beds of which are so soft and shaly that they are easily disintegrated, and masses from above tumble over into the valley.

Diadem, an arch rising from the rim of a crown or of a coronet, and uniting with other arches to form a center.

Diagnosis, in medicine (1) The sign or symptom by which a disease is known or distinguished from others; (2) That branch of medical science which deals with the study of the symptoms by which diseases are diagnosed or discriminated; symptomatology.

Dial, an instrument for showing the time of day by the sun's shadow. Ahaz, about 771 B. C., set up the dial which is mentioned in the account of the miraculous cure of his son Hezekiah. This is perhaps the first dial on record, and is 140 years before Thales, and nearly 400 years before Aristotle and Plato, and just a little previous to the lunar eclipses observed at Babylon, as recorded by Ptolemy. Dials are of various construction, according to the presentation of the plane of the dial. The word is now commonly applied to the face of a clock or watch, meter, etc.

Dialect. In the philosophical sense of the word, a language which resembles another in its general features, but differs from it in details. The two most widely spread families of languages in the world are the Indian-Gothic, and the Semitic. In the former are included the Sanskrit, Zend, Armenian, Greek, Latin, Lithuanian, Slavonic, Teutonic, and Celtic dialects. In all these, the resemblance, though often far distant, is able to be traced. The Semitic embraces the Hebrew, Syriac, Arabic, and other dialects not so well known.

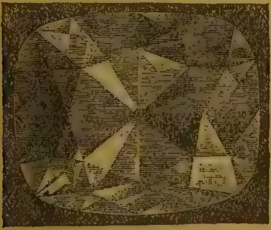
Dialectics, the old name for logic, or the art of reasoning and disputing justly.

Dialogue, a conversation or discourse between two or more persons. The word is used more particularly for a formal conversation in theatrical performances, and for a written conversation or composition, in which two or more persons carry on a discourse.

Diamantina, a town in the Brazilian province of Minas Geraes. It is the center of a rich diamond district; has manufactures of cotton and goldware, and is the seat of a Roman Catholic bishop. Pop. 13,000.

Diameter, in geometry, a line drawn passing through the center of a circle or other curvilinear figure, and terminating each way in the circumference.

Diamond, a natural form of carbon, highly valued as a precious stone when transparent and of the crystalline form. It is the hardest substance known; but in spite of this hardness it is very brittle and cleavable. It is generally colorless, but sometimes tinged pink, red, orange, yellow, green, blue, brown, or black. Blue, red, and green are exceedingly rare colors. The finest deep red diamond known is that in the possession of the Russian Crown, purchased in the time of the Emperor Paul, of Russia. Light yellow, straw, and brown are the most common colors; rich yellow and browns are also highly prized. Some bluish-white Brazilian diamonds are phosphorescent in the dark after exposure to the sunlight. The diamond is unaffected by any liquid and infusible at the highest attainable temperature. It gradually burns away before the oxy-hydrogen blowpipe, or in the electric furnace, or when it is heated red-hot and plunged into an atmosphere of oxygen, carbonic acid then being produced. Exposed to the intense heat of the voltaic arc, the diamond becomes converted into graphite. Besides its value as a gem it is of great use in the arts and manufactures. Diamond dust is used for cutting and polishing other gems.



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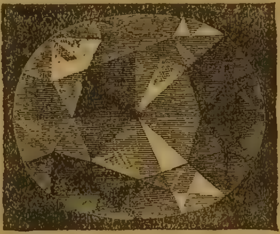
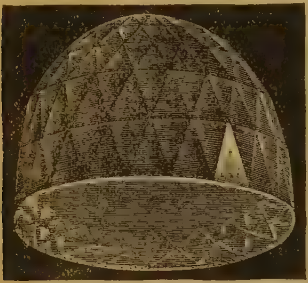


THE KOHINUR.

Originally diamonds were preserved in their natural form, but in 1456 Louis de Berguin or Bruges discovered the art of polishing them on rotating disks with diamond dust. These circular disks are at the present time of soft steel covered with diamond dust and oil, and made to revolve at 3,000 revolutions a minute. This gives the diamonds the artistic smooth surfaces and sharply defined edges. The process is slow and tedious, and requires great skill to produce fine results. Until a few years ago Amsterdam was the great diamond-cutting center of the world, but the finest cutting is now done in the United States, and in a great measure by machinery.

The finest brilliant in the world today is the "Jubilee" diamond, shown at the Paris Exposition of 1900; this was a brilliant of 239 carats of wonderful brilliancy and purity, and was found at the Jagersfontein mine in South Africa. Diamonds of from 1 to 22 carats each have been found in 24 localities in the United States, mapped by Kunz for the United States Geological Survey.

Authors and composers of Eastern tales long wrote of diamonds as being found in India only, and chiefly in the mines of Golconda — a misnomer, as Golconda was the market not the mine; and diamonds from many mines were sold there. But since the year 1728 these stones have been found in great abundance in Brazil. In 1829 a vein of diamonds was discovered in the Ural Mountains; and in 1867, in the S. of Africa, John O'Reilly, a trader and hunter, reached the junction of two rivers, and stopped for the night at the house of a farmer named Van Niekerk. Children were playing with some pebbles they had found in the river. O'Reilly took one of these pebbles to Dr. Atherstone at Cape Town, who said that it was a diamond of 22½ carats. It was sold for $3,000. Niekerk remembered that he had seen an immense stone in the hands of a Kaffir witch-doctor, who used it in his incantations. He found the man, gave him nearly all he possessed for the stone, and sold it the same day to an experienced diamond buyer for $56,000. This was the famous "Star" of South Africa. It weighed 84½ carats in the rough, and was found to be a gem quite the rival of an Indian stone in purity and brilliancy. The mines at Kimberley, 600 miles from Cape Town, are of exceeding value, the richest in the world. The output of a single mine, the "Kimberley," is $4,000,000 annually, and within 10 years this district has yielded about $58,000,000 in dividends. Ninety-five per cent. of all the diamonds produced in the past 20 years came from South Africa.



THE GREAT MOGUL.

Most of the great diamonds distinguished for beauty and size have very interesting histories. One of the most famous is the Koh-i-Nur, or Koohinoor, "Mountain of Light." The legend is that it was carried 5,000 years ago by the hero Karna, whose deeds are celebrated in the "Mahabharata." It made its first appearance in history in the 14th century, when Ala-ed-din brought it to Delhi. At that time it was supposed to weigh 793 carats. When in 1673 the Grand Mogul sold it to Tavernier, it weighed only 279 carats, having been injured by the lack of skill of a Venetian lapidary. It was brought in 1739 at the sack of Delhi to Afghanistan. Thence it came into the possession of the East India Company, which presented it in 1850 to the English Crown. It was re-cut in 1852 and now weighs 106 1-16 carats.

What is said to be the largest stone in the world was sent to London from the Jagersfontein mines in South Africa in 1893. It weighed 971 carats or nearly half a pound, and was three inches in length. A prehistoric diamond mine is believed to have been discovered near Winburg in the Orange Free State, a hundred feet in depth and with tunnels branching off for several hundred feet. In these were found primitive tools, armor, and weapons, and the skeletons of men who must have been above the average stature of any race of the present day. The natives have no tradition concerning them and the mines there have been opened for gold.

Another important diamond is the one at the point of the scepter of the Russian empire, known as the Orloff, which weighs 194¾ carats. At one time it formed the eye of an idol in the temple of Seringham in Mysore, whence it was stolen. It was in the throne of Nadir Shah, and after his murder it was bought by an Armenian merchant in 1772 at the price of 450,000 silver rubles and the title of nobility. By the gift of Prince Orloff, a favorite of Catherine II., from whom it derived its name, it came into her possession. Some writers believe that this and the Koh-i-Nur are the two parts of the "great mogul" diamond.

The Regent or Pitt diamond was, till the recent opening of the South African mines, for over a century, one of the most perfect and beautiful diamonds in existence. It weighs 136.75 carats, and is of the purest water and most perfect shape. It came from the East Indies and was sold by a sailor to Pitt, governor of Fort St. George. From him it came into the hands of the Duke of Orleans at the time of the French Revolution. It was in pawn at the hands of a merchant by the name of Trescow. Afterward it decorated the sword hilt of Napoleon I., and is now in the Galerie d'Apollon in the Louvre.

One of the finest of diamonds is the Sancy diamond, 53½ carats, of exquisite shape and perfect water. It has been traced back to Charles the Bold, who lost it in 1477 at the battle of Nancy. It is now owned by a collector, who paid $70,000 for it.

One of the most superb diamonds known is the sapphire-blue brilliant Hope diamond, valued at about $100,000. It is believed to have been cut from a blue diamond weighing in the rough 112½ carats, sold by Tavernier to Louis XIV., and which disappeared in the troubles of 1792. The largest diamond ever found in Brazil weighed 254½ carats, and was discovered in 1853 by a negress in the river Bogageno; it is known as the "Star of the South." It was sold to the Gaekwar of Baroda for $450,000.

From 1750 to 1870 the value of a diamond was fixed on a basis of the square of its weight; that is, a one-carat stone was worth $100, a 10-carat stone was worth — 10 x 10 x 100 — $10,000. This was due to the fact that large stones were rare. But in the African mines, large stones are found, and the increase in value from one carat up is worth only a fraction more per carat than the carat weight would show. When brilliants are exceedingly small the value per carat may be double that of stones weighing one-sixteenth to one-fourth carat each, owing to the difficulty of cutting. Slight imperfections lower their value.

Diamond Necklace, The, a famous piece of jewelry, made in Paris about 1775, and intended for Madame Dubarry, the favorite of Louis XV. She, however, was excluded from court on the death of Louis before the necklace was finished. After being made it was found to be so costly that no one could purchase it. It was valued at about $400,000. The Prince Cardinal de Rohan persuaded by an adventuress named De Lamotte that the queen (Marie Antoinette) regarded him with favor, became completely infatuated with the idea. One night in August, 1784, he had the happiness of a moment's interview with the queen in the person of a girl who closely resembled her. De Lamotte had stated to the cardinal that the queen was desirous of obtaining this glorious necklace, and that not having sufficient money just then, she would sign an agreement to purchase it if the cardinal would become security. The cardinal consented. The agreement was approved and signed with the royal signature, also with that of the cardinal, who carried the treasure to Versailles, where it had been agreed the queen should send for it. In a few days De Lamotte and her husband were busily engaged in selling the separate diamonds in the necklace.

In a few months the cardinal found himself in the Bastille, where some of those by whom he had been duped already had been lodged. In May, 1786, the trial of the prisoners was brought to a close. De Lamotte was branded on each shoulder with the letter V (for voleuse, "thief"), and was sentenced to perpetual imprisonment. Her husband, who had fled to England, was sentenced to the galleys for life. The cardinal and the girl who had personated the queen were dismissed without punishment. The queen was supposed by the populace to have shared in the plot, and its odium was heaped on her, as she was taken to the guillotine.

Diamond State, Delaware; so named on account of its diminutive size, and thus, like a diamond, of proportionately high value.

Diana, the Roman goddess of chastity and hunting, the daughter of Jupiter and Latona, and the sister of Apollo or Phœbus, from which circumstance she is occasionally called Phebe, her usual name in heaven as Diana was on earth. This goddess was worshipped in many forms.

Diapason, a term in music by which the ancient Greeks designated the octave. The French use the term as equivalent to pitch. Diapason is also the English name given to the fundamental stops of the organ.

Diaphoretics, agents used in medical practice for producing a greater degree of perspiration than is natural, but less than in sweating. The Turkish bath and a large part of hydropathic treatment, diluent drinks, etc., are employed for this purpose.

Diaphragm, an inspiratory muscle and the sole agent in tranquil respiration. It is the muscular septum between the thorax and abdomen, and is composed of two portions, a greater muscle arising from the ensiform cartilage, and a lesser arising from the bodies of the lumbar vertebræ by two tendons.

Diarbekir, a town of Asiatic Turkey, capital of a province of the same name; situated on the right bank of the Tigris; 390 miles N. W. of Bagdad. The town is surrounded by high strong walls, and commanded by a citadel built on a high basalt rock, against which the flat-roofed houses rise above each other in terraces. The population has dwindled to 40,000, mostly Kurds and Armenians. The city is the residence of a pasha, and the seat of a Greek bishop, as also usually of the Jacobite patriarch of Antioch.

Diarrhœa, a common disease, which consists of an increased discharge from the alimentary canal, the evacuations being but little affected, except in their assuming a more liquid consistence. This is generally preceded or accompanied by flatulence and a griping pain in the bowels, and frequently by nausea and vomiting.

Diary, a daily record of events or observations made by an individual. In it the man of letters inscribes the daily results of his reading or his meditations; to the mercantile man it serves the purpose of an order or memorandum book; while the physician finds it indispensable as a register of engagements.

Diaz, Mrs. Abby (Morton), an American story-writer; born in Plymouth, Mass., in 1821; was a member of the famous Brook Farm Association, and has been an earnest worker in social reforms.

Diaz, or **Dias, Antonio Goncalves,** a Brazilian poet; born in Caxias in 1823; died at sea in 1864 or 1866. His verses give proof of great originality, with tenderness of feeling and a lively wit.

Diaz, or **Dias, Bartholomeu,** a Portuguese navigator of noble birth who flourished during the latter half of the 15th century. He took a great interest in geographical discovery, and in 1486, the king gave him the command of two vessels with a view to following up the discoveries on the W. coast of Africa. Diaz soon reached the limit which had been attained in South Atlantic navigation, and first touched land in 26° S. lat. Driven by a violent storm, he sailed round the S. extremity of Africa without realizing the fact, and discovered Algoa Bay. The discontent of his crew compelled him to return; and arriving in Lisbon, 1487, was at first greeted with enthusiasm; but soon saw Vasco da Gama preferred before him, and was compelled to act under the latter in the grand expedition of 1497. Vasco da Gama even sent him back to Portugal after they had reached the Cape Verde Isles. Three years after, he joined the expedition of Cabral, the discoverer of Brazil, but was lost in a storm May 29, 1500.

Diaz, Porfirio, a Mexican statesman; born in Oaxaca, Sept. 15, 1830; received a classical education at the Oaxaca Institute, and had begun studying law when the war with the United States broke out; served through that struggle in the National Guard, and on the conclusion of peace made a study of military science. On Santa Ana's accession to the dictatorship, he left the army and practised law; but returned and bore a conspicuous part in the revolution of 1854; took the field to oppose the French troops and was taken prisoner, but made his escape; harassed Maximilian's troops till forced to surrender a second time at Oaxaca in 1865; besieged and captured Puebla in 1867, and immediately marched on Mexico city, which surrendered to him June 21. In 1872 and 1876 he led revolutions against the government, and after three severe battles occupied the capital in the latter year. In 1877 he was elected president to fill the unexpired term of the fugitive president, Lerdo. According to the "plan of Tuxtepec," which he had proclaimed, he was ineligible to succeed himself. His secretary, General Gonzales, was elected president, and General Diaz was appointed Chief-Justice of the Supreme Court, and elected governor of Oaxaca. In 1884 he was reëlected president; in 1886 his partisans secured the abolition of the law prohibiting a second consecutive presidential term, and he was thereafter continuously reëlected, his sixth term expiring Nov. 30, 1904. His government of Mexico has been an era of marvelous progress, and pacification, and he is justly regarded as one of the greatest living Americans.

Diaz de Escobar, Narciso, a Spanish poet; born in Malaga, June 25, 1860. He won great popularity with his lyric poems, and several of his dramatic compositions have been very successful.

Diaz del Castillo, Bernal, a Spanish chronicler of the conquest of Mexico; born about 1498; died in Mexico about 1593. His "True History of the Discovery and Conquest of New Spain" was published at Madrid in 1632.

Dibdin, Charles, an English lyric and dramatic poet and actor; born in Southampton in 1745. He opened a little playhouse in London, the Sans Souci Theater, and there brought out his own plays, enlivened with his own songs. His "Sea Songs" are popular favorites still. He died July 25, 1814.

Dice (plural of die), small cubes of ivory, marked on their sides with black dots, from one to six. The invention of dice is attributed to Palamedes (circa 1244 B. C.). But the use of cubes with numbered sides for gambling purposes is probably much earlier.

Dick, Thomas, a popular Scotch religious and scientific writer; born near Dundee, Nov. 24, 1774. His many books brought him great popularity both in England and the United States, but very little pecuniary return. In 1847 he received a crown pension. He died July 29, 1857.

Dickens, Charles, an English writer of fiction, and commonly regarded as England's greatest novelist, was born in Landport, Portsmouth, where his father at that time was connected with the dockyard, Feb. 7, 1812. His earliest years were passed chiefly in Chatham and in London, where his father, a very careless and improvident man, spent some time along with his household in a debtor's prison. Charles, about this period, and while still a mere boy, was a drudge in a blacking warehouse. He received little education, though he was for two years at a private school in Hampstead Road, London. About 1826 he became an attorney's clerk, and while in this position studied shorthand and other subjects, and finally was able to exchange his occupation for that of a newspaper reporter and critic. He exhibited eminent ability both as a reporter and a depicter of scenes in city life, and in 1835 he was engaged on the "Morning Chronicle," edited by Dr. Black, then one of the leading daily papers of the metropolis. On June 9, 1835, appeared the first of the series of "Sketches of Life and Character by Boz," which were published in the evening edition of that paper, under the title of "Thoughts about People, by Boz."

The "Sketches by Boz, Illustrative of Everyday Life and Everyday People," collected from the "Morning Chronicle" of 1835–1836, were published by Macrone in 1836, in two vols., with illustrations by George Cruikshank. From this publication may be dated the origin of Dickens' fame.

There is no space to recite here the many products of his genius familiar in every secular library.

In 1841 Dickens visited the United States for the first time. Here many aspects of society struck him in a curious light, and on his return he wrote "American Notes for General Circulation" (Chapman and Hall, 1842). His frank and grossly exaggerated comments aroused a certain amount of feeling. In 1845 Dickens went to Italy, and paid a visit to Rome. On his return a new enterprise awaited him. The "Daily News" started on Jan. 1, 1846, was intrusted to his editorial management; but, despite his early training, this was an occupation uncongenial to his mind, and in a few months the experiment was abandoned.

He visited the United States a second time in 1867–1868 on a reading tour. The enthusiastic reception he met with caused him somewhat to modify the severe opinions he had expressed in his "American Notes," and a sort of apologetic note was prefixed to the next edition of them, with the desire expressed that it should accompany all future editions. He was one of the founders of the Guild of Literature, and in many other ways took an interest in charitable schemes, especially in connection with the literary profession. He died June 9, 1870, at his residence, Gad's Hill Place, near Rochester, England. In his will Dickens expressed a wish to be buried in "an inexpensive, unostentatious, and strictly private manner, without any public announcement of the time or place" of burial. So far as was consistent with the nation's desire to honor the great author, these directions were followed, but his modest request was not allowed to prevent his interment in Westminster Abbey.

Dickens, Charles, an English editor, eldest son of Charles Dickens; born in 1837. He was educated at King's College, Eton, and at Leipsic; became assistant to his father as editor of "All the Year Round," and subsequently chief partner in a printing firm. He edited a "Life of Charles Mathews," "The Dictionary of London," "Paris and the Thames," and a complete edition of his father's works. He died in West Kensington, England, July 20, 1896.

Dickens, J. L., an American clergyman; born in Gibson co., Tenn., March 3, 1853; was graduated at Bethel College in 1879; and held pastorates in the Cumberland Presbyterian Church. He taught and was president of Bethel College, Trinity University, and of Quanah College, Texas. He was also superintendent of the South Central District of the American Society of Religious Education.

Dickey, Charles Andrews, an American clergyman; born in Wheeling, W. Va., Dec. 25, 1838; was educated at the Monongalia Academy, Morgantown, Va., and at Washington College, Pennsylvania; graduated at the latter in 1858; studied at the United Presbyterian Theological Seminary, and became pastor of the Bethany Presbyterian Church, Philadelphia, in 1893. He became president of the Presbyterian Hospital, Philadelphia, in 1883; and was frequently a member of the General Assembly, in which he bore a distinguished part; and was moderator of the Presbyterian General Assembly, in 1900–1901. During his pastorate in Philadelphia he has been prominently associated with all the benevolent operations of his Church.

Dickinson, Anna Elizabeth, an American orator, novelist, and playwright; born in Philadelphia Oct. 28, 1842. At the outbreak of the Civil War she became known as a speaker, and under the stimulus of the events became an orator of great power and persuasiveness. She has for some time lived in retirement.

Dickinson, Daniel Stevens, an American lawyer; born in Goshen, Conn., Sept. 11, 1800. He was admitted to the New York bar, where he soon became prominent; was elected to the State Senate in 1836, and became a leader in the Democratic party, which made him lieutenant-governor in 1842, and in 1844 sent him to the United States Senate. He was brought forward as a candidate for the presidency in 1852, but without success. He spent the later part of his life at Binghamton, N. Y., in the practice of his profession. He died in New York city April 12, 1866.

Dickinson, Don M., an American lawyer; born in Port Ontario, N. Y., Jan. 17, 1846; removed to Detroit, Mich., graduated at the Law Department of the University of Michigan, and began the practice of law in Detroit, and later practised in Washington, D. C. He was conspicuous in politics as a Democrat; was secretary of the Democratic State Central Committee, which ran the

Greeley campaign in 1872; withdrew from the Democratic party, but was won back by Mr. Tilden; and was chairman of the Democratic National Committee in 1876. He was Postmaster-General of the United States in 1887–1889; chairman of the Democratic National Campaign Committee in 1892; and was senior counsel for the United States before the Joint High Commission on the Bering Sea Claims, under the Fur Seal Arbitration in 1896–1897.

Dickinson, Emily, an American poet; born in Amherst, Mass., Dec. 10, 1830. In 1892 a collection of her poems was issued which received warm praise from competent critics. She died in Amherst, May 15, 1886.

Dickinson, John, an American political writer and statesman; born in Maryland, Nov. 13, 1732. He wrote a series of State papers that had great influence in their day. He was a member from Pennsylvania of the Second Continental Congress, and opposed the Declaration of Independence in a speech which has been preserved. The purity of his motives was never questioned, however, and he remained loyal to the United States. Dickinson College at Carlisle, Pa., was named in his honor. He died in Wilmington, Del., Feb. 14, 1808.

Dickinson College, a co-educational institution in Carlisle, Pa.; founded in 1783, under the auspices of the Methodist Episcopal Church.

Dictator, a magistrate of ancient Rome, created in times of great emergency, distress, or danger, and invested, during the term of his office, with absolute and unlimited power. The office was abolished by law after the death of Cæsar. The title is frequently assumed by military leaders in Spanish-America.

Dictionary (from the Latin dictio, a saying, expression, word), a book containing the words, or subjects, which it treats, arranged in alphabetical order. It may be either a vocabulary, or collection of the words in a language, with their definitions, or a special work on one or more branches of science or art prepared on the principle of alphabetical arrangement, such as dictionaries of biography, law, music, medicine, etc.

Didactic, or **Didactical,** a term applied to every species of writing, whether in verse or prose, the object of which is to teach or explain the rules or principles of any art or science.

Diderot, Denis, a French philosopher, foremost of the "Encyclopædists"; born in Langres, Oct. 5, 1713. He died July 31, 1784.

Didier, Charles, a French poet and novelist (1805–1864); born in Geneva. He wrote some novels designed to awaken patriotic sentiment in Italy, and to make known the struggles of the carbonara and other revolutionists against Austrian and papal dominion.

Didier, Eugene Lemoine, an American prose-writer; born in Baltimore, Md., Dec. 22, 1838. He published the "Life of Edgar A. Poe"; "Life and Letters of Madame Bonaparte," etc.

Dido, or **Elissa,** the reputed founder of Carthage. She was the daughter of a King of Tyre, and after her father's death her brother Pygmalion murdered her husband Sicharbas, or as Virgil calls him Sichæus, with the view of obtaining his wealth; but Dido accompanied by many Tyrians of her party, fled with all the treasure over sea, and landing on the coast of Africa founded Carthage about 860 B. C. The story is told by Virgil with many inventions of his own in the "Æneid" (books i and ii).

Didot, a famous house of printers, booksellers, and typefounders in Paris. The founder was FRANCOIS DIDOT, born in 1689, died 1757. Of his sons FRANCOIS-AMBROISE (born 1720, died 1804), and PIERRE-FRANCOIS (born 1732, died 1795) the first distinguished himself in the typefounding art as an inventor of new processes and machines, the second was equally eminent by his bibliographical knowledge, and contributed much also to the advancement of printing. PIERRE (born 1761, died 1853) succeeded his father Francois-Ambroise in the printing business. He made himself famous by his magnificent editions of classic authors in folio, among which his "Virgil" (1798) and his "Racine" (1801), may be particularly mentioned. He did much also for the improvement of types. He is known also as an author. FIRMIN (born 1764, died 1836), the brother of Pierre, took charge of the type-founding, was the inventor of a new sort of script, and an improver of the stereotype process. AMBROISE-FIRMIN (born 1790, died 1876) and HYACINTHE FIRMIN (born 1794, died 1880) occupied a distinguished place among the publishers of Paris.

Die, a word with various applications. (1) In punching-machines, a bed-piece which has an opening the size of the punch, and through which the piece is driven. In nut-machines the nut-blanks may be made by one die and punched by another. (2) In forging, a device consisting of two parts which coact to give to the piece swaged between them the desired form. (3) In sheet-metal work, a former and punch or a cameo and intaglio die between which a piece of sheet-metal is pressed into shape by a blow or simple pressure. In coining, both dies are intaglio, so as to make a cameo or raised impression. The upper die has the obverse, the face, which is often the bust of the sovereign or national emblem. The lower die has the reverse, with an effigy, legend, value, etc., as the case may be.

Diebitsch-Sabalkanski, Hans Karl, a Russian general, born in Grossleippe, in Silesia, in 1785; was educated at the military school of Berlin, but in 1801 quitted the Prussian service for that of Russia. He was present at the battles of Austerlitz and Friedland; served with distinction in the campaign of 1812; and was made lieutenant-general at the age of 28. He had the chief command in the Turkish war of 1828–1829; stormed Varna; and made the famous passage of the Balkans, for which the surname of Sabalkanski was conferred on him. In 1830 he commanded the army sent against the revolted Poles. He died June 9, 1831.

Diefenbach, Lorenz, a German philologist; born in Ostheim, Hesse, July 29, 1806; studied theology and philosophy at Giessen; traveled much, and was 12 years pastor and librarian at Solms-Laubach. In 1848 he settled at Frankfort-on-Main, where in 1865 he was appointed second librarian to the city. He died March 28, 1883.

Dieffenbach, Johann Friedrich, a German surgeon; born in Konigsberg, Feb. 1, 1794; became Professor of Surgery at Berlin, where he died, Nov. 11, 1847. He was distinguished as an operator, especially in the art of forming by transplantation new noses and lips.

Dielman, Frederick, an American painter; born in Hanover, Germany, Dec. 25, 1847; removed to the United States in childhood, and graduated at Calvert College. He was a topographer and draughtsman in the United States Engineer Department in 1866–1872. He studied art under Diaz at Munich, and established a studio in New York in 1876. He was the designer of the Mosaic panels, "Law" and "History" in the new Congressional Library at Washington, D. C.

Diemen, Anton Van, a Dutch administrator; born in 1593. Having gone to India, he speedily rose to the highest dignities; and was at length made governor-general. Abel Tasman, whom he sent with a vessel to the South Seas in 1642, gave the name of Van Diemen's Land to the island now called Tasmania. Van Diemen died in 1645.

Dieppe, a seaport town of France, Department of Seine-Inferieure, on the English Channel, at the embrouchure of the Arques, 93 miles N. N. W. of Paris. In early times Dieppe was the chief port of France, but its prosperity diminished after the revocation of the Edict of Nantes (1685). Population, 21,091.

Dies Iræ (Lat., day of wrath), the name commonly given, from the opening words, to a celebrated Latin hymn describing the final judgment of the world. This hymn has been frequently translated into English.

Dieskau, Baron John Erdman, a German military officer; born in Saxony in 1701. He was a soldier of fortune from his youth, having acted as aide to Marshal Saxe. In 1755 he was sent to Canada at the head of a French force. Making a raid into New England he encountered a body of Massachusetts militia by whom he was signally defeated in a bloody battle, wounded, and taken prisoner. He died near Paris, Sept. 8, 1767.

Diet, a meeting or assembly of delegates or dignitaries convened and held from day to day for legislative, ecclesiastical, political, or administrative purposes; specifically, the legislative assemblies of the German Empire, Austria, the Cantons of Switzerland, etc.

Diet, a course of eating and drinking, especially when followed with reference to hygienic effect.

Diez, Friedrich Christian, a German critic and historian of literature, founder of Romance philology; born in Giessen, March 15, 1794; died in Bonn, May 29, 1876.

Differential Calculus, that branch of mathematics which has for its object the explanation of the method of deriving one determinate function from another by the process of differentiation.

Differential Thermometer, an instrument for determining very minute differences of temperature.

Digby, a small seaport of Nova Scotia, on St. Mary's Bay, reputed for its curing of a variety of small herrings or pilchards ("Nova Scotia sprats").

Digby, Sir Kenelm, an English natural philosopher; born in Gayhurst, near Newport Pagnell, July 11, 1603. He was one of the first members of the Royal Society (1663), and died June 11, 1665.

Digby, Kenelm Henry, an English antiquarian; born in 1800; died in London, where most of his long life was spent, March 22, 1880.

Digestion, the change which food undergoes in order to prepare it for the nutrition of the animal frame. It is carried on in the higher animals in the digestive system.

Digit (a finger), a term applied to the 10 symbols of number, 0, 1, 2, etc., to 9; thus, 305 is said to be a number of three digits. Numbers were originally indicated by the fingers, and hence the name. Astronomers use digit to signify a twelfth-part of the diameter of the sun or moon, and speak of an eclipse of seven digits, meaning that seven-twelfths of the diameter is covered.

Digitalis, a genus of plants, natives of Europe and Western Asia. There are numerous species, all of them tall herbs. One is the common fox-glove. The dried leaves of the fox-glove are used in medicine, as powder, infusion, or tincture, or in the form of the active principle, digitaline.

Digitigrada, a section of the order Carnivora, comprising the lions, tigers, cats, dogs, etc., in which the heel is raised above the ground, so that the animals walk more or less on the tips of the toes.

Dijon, the chief town in the French Department of Cote-d'Or, formerly capital of the old duchy of Burgundy, lies, spread out on a fertile plain at the foot of Mont Afrique (1,916 feet), at the junction of the Ouche and Suzon, and on the Canal de Bourgogne, 196 miles S. E. of Paris by rail. Its importance as a railway center has rendered it of consequence in the inner line of French defenses. On the death of Charles the Bold it came with Burgundy into the possession of France in 1477. In October, 1870, after a sharp engagement before the city, Dijon capitulated to a German force. There was again severe fighting here in January, 1871. Pop. (1901) 70,428.

Dike, or **Dyke,** a word variously used to represent a ditch or trench, and also an embankment, rampart, or wall. It is specially applied to an embankment raised to oppose the incursions of the sea or of a river, the dikes of Holland being notable examples of works of this kind.

In the United States the term dike is almost wholly restricted to the structures of more or less permanence built in various ways in the bed of a stream to regulate its flow, narrow the low water cross section, concentrate the current, increase its local scouring effect and thereby deepen the river channel. The earthen embankments designed to restrain the flood waters are called levees. The most notable examples are found along the Mississippi river where it winds its way through the alluvial plain which it has built up below the mouth of the Ohio river. These levees are placed some little distance back from the river, and according to the local conditions vary in height from two or three feet to over 20 feet. The crowns of the levees are from 8 feet to 10 feet wide with side slopes of about 1 in 3. Levees over 12 feet in height are generally strengthened by a mass of earth on the land side forming a banquette. Levee building began many years ago along the lower part of the river and it has been carried on practically continuously ever since. The length of the levee lines along the Mississippi river in 1900 was about 1,300 miles, and the area protected from overflow about 27,000 square miles.

Dilemma, in logic, an argument in which the same conclusion may be drawn from two contrary propositions.

Dilettante, a lover or admirer of the fine arts; an amateur; frequently applied half in contempt to one who affects a taste for or skill in art, science, or literature.

Dilke, Charles Wentworth, an English publicist and critic; born Dec. 8, 1789. A journalist and book reviewer of celebrity. He died in Hants, Aug. 10, 1864.

Dilke, Sir Charles Wentworth, an English publicist and critical and political writer; born in London, Sept. 4, 1843. A brilliant but checkered political career has been varied by literary work.

Dilke, Emilia Frances, Lady, an English art critic and miscellaneous writer; wife of Sir Charles W. Her chief work is "The Renaissance in France," illustrated by herself.

Dillmann, Christian Friedrich August, a German Orientalist; born in Illingen, in Wurtemberg, April 25, 1823. In 1864 he was called to the chair of Old Testament Exegesis at Giessen, which in 1869 he resigned to become Hengstenberg's successor at Berlin. Dillmann was beyond question the first authority in Europe on the Ethiopic languages. He died July 4, 1894.

Dillon, John, an Irish politician; son of John Blake Dillon (1816-1866); born in New York in 1851; was educated at the Catholic University of Dublin, after which he became a doctor. He early identified himself with the Parnellite movement, and in 1880 was elected to Parliament for County Tipperary. In the House of Commons Dillon soon became prominent for the violence of his language, while speeches delivered by him in Ireland led to his imprisonment in 1881, 1881-1882, and 1888. From 1883 to 1885 he was absent from political life on account of ill-health; but in the latter year he reappeared and was elected for East Mayo. He was one of the most prominent promoters of the "Plan of Campaign." In 1896 he succeeded Justin McCarthy as chairman of the main section of the Nationalist party.

Diluents, remedies that increase the proportion of fluid in the blood. They are employed in fevers to lessen thirst and increase secretion. Water is the only real diluent.

Diluvium, formerly applied to accumulations of gravel, sand, clay, etc.; supposed to be the result of the Noachian deluge; then applied to all masses of comparatively recent age, apparently the result of powerful aqueous agency; now the name is verging to extinction, drift having taken its place.

Dimension, in algebra, a literal factor of a product or term; also called a degree. A simple equation is said to be of one dimension. A quadratic of two, a cubic of three, and so on. In geometry, extension in a single line or direction. A line is extended in one direction, or has one dimension, that is length; a surface is extended in two directions, or has two dimensions, length and breadth; a solid is extended in three directions, or has three dimensions, length, breadth, and height or thickness.

Dimity, a heavy, fine, white cotton goods, with a crimped or ridged surface; plain, striped; or cross-barred.

Dingelstedt, Franz von, Baron, a German poet and dramatist; born in Halsdorf, in Upper Hesse, June 30, 1814. He died in Vienna, May 5, 1881.

Dingley, Nelson, an American legislator; born in Durham, Me., Feb. 15, 1832; received a high school education; taught school till 1851; studied at Waterville College (now Colby University), and later at Dartmouth College, and was graduated at the latter in 1853; admitted to the bar in 1856; purchased the Lewiston "Journal" in 1856; added a daily edition in 1865; and was its editor and proprietor till his death. He was elected to the State Legislature in 1861; served in that body till 1865 and in 1868 and 1873, and was Speaker of the House in 1864–1865. He was elected governor of Maine in 1873 and reëlected in 1874; and was a member of Congress from 1881 till his death. From the beginning of his Congressional career he was conspicuous as an advocate of the principle of protection and was author of the Dingley Tariff Bill of 1897. In 1898 he was appointed a member of the Joint High Commission. He died in Washington, D. C., Jan. 13, 1899.

Dingo, the native wild dog of Australia, of a wolf-like appearance and extremely fierce. It is very destructive to the flocks, killing more than it eats.

Dinka, a powerful tribe of Negritos who live on both sides of the White Nile between lat. 6° and 12° N. Their territory covers 60,000 square miles. They are intelligent, have some skill in making articles for household use, and also follow agriculture. Each village is governed by its own chief.

Dinornidæ, a family of fossil birds found in New Zealand, and believed to be akin to the ostriches though by some placed between them and the wading birds.

Dinornis, or **Deinornis,** a genus of fossil birds, founded by Professor Owen, and published by him in 1839 with much sagacity on the authority of the fragment of a femur brought from New Zealand.

Dinotherium, or **Dinothere,** a genus of fossil mammals. The D. giganteum, of which the entire skull and lower jaws were found in Miocene sand at Eppelsheim on the Rhine by Klipstein, was apparently larger than the elephant. Its tusks, which projected from the lower jaw, curved downward, and were used by the animal, which was semi-aquatic, to support its head on the shore.

Dinsmore, Hugh Anderson, an American lawyer; born in Benton Co., Ark., Dec. 24, 1850. He was minister-resident and consul-general in the kingdom of Korea in 1887–1890; and a member of Congress in 1893–1903.

Dinwiddie, Robert, a British official and lieutenant-governor of Virginia in 1752–1758; born in Scotland, about 1690. During his official career he recommended the annexation of the Ohio Valley and the erection of forts to secure the W. frontier against the French. He was one of the most earnest supporters of the French and Indian War. He died in Clifton, England, Aug. 1, 1770.

Diocese, the territorial district or portion of the Church forming the spiritual jurisdiction of a bishop.

Diocletian, C. Valerius Diocletianus (surnamed Jovius), a man of mean birth, a native of Dalmatia, proclaimed Emperor of Rome by the army in 284 A. D. He defeated Carinus in Mœsia (286), conquered the Alemanni, and was generally beloved for the goodness of his disposition; but was compelled by the dangers threatening Rome to share the government with M. Aurelius Valerius Maximian. In 292 C. Galerius and Constantius Chlorus were also raised to a share in the empire, which was thus divided into four parts, of which Diocletian administered Thrace, Egypt, Syria, and Asia. As the result of his reconstitution of the empire there followed a period of brilliant successes in which the barbarians were driven back from all the frontiers, and Roman power restored from Britain to Egypt. In 305, in conjunction with Maximian, he resigned the imperial dignity at Nicomedia, and retired to Salona in Dalmatia, where he cultivated his garden in tranquility till his death in 313. In the latter part of his reign he was induced to sanction a persecution of the Christians.

Diodati, Giovanni, an Italian Protestant clergyman; born in Lucca, about 1576, of a noble Catholic family. He is most celebrated for a translation of the Bible into Italian, which is superior to his translation of it into French. He died in Geneva, Oct. 3, 1649.

Diodorus Siculus, a native of Agyrium, in Sicily, who wrote a "Universal History" in 40 books, of which only 15 books and a few fragments remain. It is a laborious but uncritical compilation of most heterogeneous materials, and occupied him 30 years. It is still valued for the portions which it has preserved to us of many lost works. He flourished about B. C. 10.

Diogenes, celebrated Greek cynic; was a native of Sinope, in Pontus, where he was born 413 B. C. He was banished from his country for coining false money, and repaired to Athens, where he studied philosophy under Antisthenes, and surpassed his master in the rudeness of his manners and his austere views of human nature. He walked about the streets with a tub on his head, in which it is said he lodged at night. He is the type of cynicism, and for his zeal as a moralist has been called the Mad Socrates. Being on a voyage, he was taken by pirates and sold into slavery at Corinth, where he became tutor to the sons of a rich citizen, but died in the greatest misery, B. C. 324. His reputation procured him a visit from Alexander the Great, who asked Diogenes if there was anything in which he could gratify him. "Only," he answered, "do not stand any longer between me and the sun." Some moral "sentences" are extant under his name, but they are thought to be apocryphal. The inhabitants of Sinope raised statues to his memory, and the marble figure of a dog was placed on a high column erected on his tomb.

Diogenes Laertius, the author of a sort of history of philosophy, appears to have been born in Laerte, in Cilicia, and to have lived toward the close of the 2d century after Christ.

Diomede Islands, a group of three small islands in Bering's Strait, midway between Asia and America.

Dion Cassius, a historian of the 3d century; born in Bithynia, went to Rome about 180; was appointed successively to many high offices; was twice consul; and wrote, in Greek, the "History of Rome," from the arrival of Æneas in Italy to A. D. 229.

Dion Chrysostomos (Dion the Golden Mouthed), a celebrated Greek rhetorician, flourished the 1st century of Christian era. He left about 80 orations or discourses on morals and politics, which are admired for their elegance of style. He died A. D. 117.

Dionysia, festivals in honor of Dionysius, or Bacchus, which originating in Egypt, were introduced into Greece by Melampus, B. C. 1415.

Dionysius the Areopagite, a native of Athens, and a member of the Areopagus, where he sat when St. Paul was brought before it, and made his famous speech respecting the "unknown God," which was the means of the conversion of Dionysius. He is supposed to have suffered martyrdom 95 A. D.

Dionysius I., the Elder, tyrant of Syracuse; was born B. C. 430. He served in the war with the Carthaginians, had himself appointed general, and, in 405, sole emperor, and head of the republic. He carried on several wars of conquest. Dionysius, like some other tyrants, was a patron of literary men and artists, aspired to literary fame, and contended for the prize at the Olympic games. He erected many fine temples. He died in 367.

Dioscorides, Pedacius, or **Pedanius,** a Greek physician; was a native of Anazarba, in Cilicia, and, probably in the 2d century of our era, accompanied the Roman armies as physician through many countries. He has left a great work on materia medica, in five books, in which he treats of all the then known medicinal substances and their properties, real or reputed. His authority in botany and materia medica was long undisputed.

Dioscuri, the classical name for Castor and Pollux, twin brothers (Pollux being the son of Zeus) and tutelary deities of wrestlers, horesmen, and navigators. Their transplantation to the sky as one of the 12 constellations of the zodiac (the Twins) is a celebrated allegory of mythology. They are sometimes styled Tyndaridæ, because Tyndarus was the nominal father of both.

Dip, the inclination or angle at which strata slope or dip downward into the earth. This angle is measured from the plane of the horizon or level, and may be readily ascertained by the clinometer. The opposite of dip is rise, and either expression may be used, according to the position of the observer.

Diphtheria, a contagious and (in its severe forms) malignant disease, caused by a specific bacillus and generally characterized by the formation of a fibrinous false membrane in the throat.

The period of incubation is usually from two to seven days. The disease begins by malaise, feeling of chilliness, loss of appetite, headache and more or less fever; soon the throat feels hot and painful and the neck is stiff and tender. If seen early, the throat is red and swollen, but a false membrane of yellowish or grayish color quickly appears in spreading patches, usually first on the tonsils, whence it often spreads to the pillars of the fauces, uvula and back of the throat, and may even extend down the œsophagus or gullet; extension of the membrane into the nasal cavities is a grave symptom. There is usually enlargement of the glands at the angle of the jaw, and albuminuria generally occurs at some stage of the disease. Diphtheritic membrane may be formed on any mucous surface, or even on a wound; if it extends into the larynx it gives rise to cough and difficulty in breathing. The throat affection is often accompanied by a low and very dangerous form of fever, with quick, feeble pulse and great and rapid loss of the patient's strength, which is still further reduced by the inability to take food; in other cases, the disease is fatal by paralysis of the heart or by suffocation due to invasion of the larynx.

Diphtheria is contagious. It may occur as a complication of scarlet fever, measles, and other infectious diseases. All gradations in the intensity of the disease from mild sore throat to septic and gangrenous forms occur. Damp and temperate climates seem to favor its development. Insanitary conditions favor its occurrence, but the disease may appear under the most favorable hygienic surroundings. One attack affords little or no protection against its recurrence.

The ways in which diphtheria bacilli may be conveyed from sick to healthy persons are almost countless. In ordinary breathing the expired breath contains no germs, but in speaking and especially in coughing, a fine spray is emitted which may contain the bacilli and thus convey the disease. All sorts of articles, such as handkerchiefs, toys, drinking utensils, furniture, clothing, bed-linen and the like, may become contaminated with the bacilli and be the means of spreading the disease.

The discovery of the diphtheria bacillus has led to the introduction of a new and most successful method of treatment of the disease, known as serum-therapy or the antitoxin treatment. The establishment of the principles and the introduction of this treatment are due especially to Behring of Germany and Roux of Paris. The underlying principle of the treatment is based on the fact that, if a susceptible animal is inoculated first with small and then with increasing doses of the toxin produced by the bacillus, the blood of the animal is found to contain a substance called anti-toxin, which has the power of neutralizing or rendering harmless the toxin. In order to obtain large quantities of the healing serum a horse is generally selected for the process of immunization. By proper methods very powerful antitoxins can be obtained. Dr. William H. Welch, of the Johns Hopkins University, in 1895, in an analysis of over 7,000 cases of diphtheria treated by antitoxin found that the fatality was reduced by this treatment by over 50 per cent of the previous death-rates; he concluded that the antitoxin serum is a specific curative agent for diphtheria, surpassing in its efficacy all other known methods of treatment for this disease. Since his report, this conclusion has been confirmed and even more favorable results have been obtained.

William H. Welch, M. D.

Diplodocus, according to Marsh, a saurian-footed, herbivorous dinosaur found in the American Jurassic deposits. The length of skull of this species was about 21 inches, of brain about 3 inches, and of body 50 feet. The animal is supposed to have been a hippopotamus-like wader, and to have lived on vegetation in the water.

Diploma, a writing or document conferring some power, authority, privilege, or honor, usually under seal and signed by a duly authorized official. Diplomas are given to graduates of a university on their taking their degrees; to clergymen who are licensed to officiate; to physicians, civil engineers, etc., authorizing them to practise their professions.

Diplomacy, the science or art of conducting negotiations, arranging treaties, and carrying on other important business between nations; the branch of knowledge which deals with the relations of independent States to one another; the agency or management of envoys accredited to a foreign court; the forms of international negotiations.

Dippel, Johann Conrad, a German theologian and alchemist; born in 1672. He studied theology, defended the orthodox party against the Pietists, led a turbulent life at Strasburg, and then joined the Pietists until an unfortunate tractate placed him in disfavor with both parties. He then turned his attention to alchemy, and during a residence at Berlin produced the oil called after him, from which indirectly followed the discovery of Prussian or Berlin blue. After various adventures and wanderings in Sweden, Denmark, and Germany, he died in 1734.

Dippel's Oil, the rectified form of the black fetid oil, containing ammonic carbonate, which can be obtained by the destructive distillation of animal matter, such as stag's-horn, ivory, or blood. The cruder form was used in medicine, despite its appearance and odor, until Dippel refined it. His oil was formerly prescribed as an antispasmodic and diaphoretic, and as a hypnotic.

Dipper, a genus of birds in the thrush family, distinguished by an almost straight, compressed, sharp-pointed bill, by the possession of a nostril valve, and still more by their peculiar manners and habits. They frequent clear, pebbly streams and lakes, feeding chiefly on mollusks and on aquatic insects and their larvæ, which they seek even under water, diving with great facility, and moving about by help of the wings.

Dipper, a name given to the seven stars in the constellation of the Great Bear, from their being arranged in the form of a dipper, or ladle.

Dipping Needle, or **Inclination Compass,** an instrument for measuring the magnetic dip or inclination; that is, the angle which a magnetized needle, free to move in the plane of the magnetic meridian, and about a horizontal axis, makes with the horizontal plane at the place.

Dipsomania, a term denoting an insane craving for intoxicating liquors, when occurring in a confirmed or habitual form. It is often of hereditary origin, but may result from sunstroke, from some injury to the brain, or from disease.

Directors, persons elected to meet together at short fixed intervals and consult about the affairs of corporations or joint-stock companies, and to advise and assist the manager. Directors are appointed by a general meeting of the shareholders in the undertaking, and a certain number of them retire every year. The duties and responsibilities of directors are defined by the constitution of the company, or by the various acts of legislature affecting joint-stock and other companies.

Directory, the name given to a body of five officers to whom the executive authority in France was committed by the constitution of the year III. (1795). The two legislative bodies, called the councils, elected the members of the directory: one member was obliged to retire yearly, and his place was supplied by election. This body was invested with the authority which, by the constitution of 1791, had been granted to the king. By the revolution of the 18th Brumaire the directory and the constitution of the year III. were abolished. It was succeeded by the consulate.

Dirhem, the name under the caliphs for a weight of silver equivalent to about 45 grains, and was also used for precious stones and medicine in Arabia, Persia, Egypt, and Turkey. As a coin the value varied, but may be given at 5½d. under the caliphs. In Turkey, the name dirhem has lately been given to the much smaller weight, the French gramme.

Dirk, a kind of dagger formerly used as a weapon of offense by the Highlanders of Scotland.

Discharge, in architecture, the relieving part of a wall, or a beam or other piece of timber, from the superincumbent weight by means of an arch thrown over it. In hydraulics, the issuing direction of water from a reaction or turbine wheel; as, the outward discharge, or Fourneyron turbine, the vertical discharge or Jonval turbine;

the center discharge, etc. In bankruptcy, a writing or document certifying that a bankrupt has satisfactorily passed the necessary forms, and is thereby discharged from all further responsibility for the debts contracted by him previous to his bankruptcy. In the military and naval services, a document given to each soldier or sailor on his dismissal from or quitting the service, in which are detailed full particulars as to his length of service, conduct, reason for discharge, etc.

Disciple, literally, one who learns anything from another; and hence, the followers of any teacher, philosopher, or head of a sect. In this sense the word is sometimes used in Scripture, as when we read of the disciples of Moses, of John, of Christ. Generally, however, it is used with reference to the last of these — the followers of Jesus. Sometimes all who received the doctrines of Christ are called disciples, but in a more limited sense, it is applied to the 70, or 72, persons who were His more immediate followers and attendants. Sometimes it is used as synonymous with apostle, and is applied to the Twelve.

Disco, an island on the W. coast of Greenland. It is very mountainous, and contains large coal deposits.

Discobolus, in classical antiquity, a thrower of a discus, or quoit; a quoit-player; specifically: the name given to the famous Greek statue of the quoit-thrower, preserved among the Townley Marbles in the British Museum.

Discord, in music, a combination of notes which produces a certain restless craving in the mind for some further combination upon which it can rest with satisfaction.

Discount, a deduction made in the payment of a bill or settlement of an account for ready or prompt payment; a sum deducted at a certain rate per cent. from the credit price of any article in consideration of prompt payment. The term discount is applied both to the amount deducted and the rate per cent. at which the deduction is calculated or allowed. Discount in banking is a charge made at a certain rate per cent. for the interest of money advanced on a bill or other document due at some future time.

Discus, Disc, or **Disk,** among the Greeks and Romans a quoit of stone or metal, convex on both its sides, sometimes perforated in the middle. The players aimed at no mark, but simply tried to throw the quoit to the greatest possible distance. It was sometimes furnished with a thong of leather to assist in the throwing.

Disease, any alteration of the normal vital processes of the body under the influence of some unnatural or hurtful condition, called the morbific cause.

Disestablishment, the act of causing to cease to be established; specifically a depriving a Church of its rights, position, or privileges as an established Church; to withdraw a Church from its connection with the State. A bill for the purpose described was introduced into the British House of Commons by Mr. Gladstone on March 1, 1869. The second reading was carried on the 24th by 368 to 250 votes, and the third on May 31, by 361 to 247. The first reading took place in the House of Lords on the motion of Earl Granville, on June 1, 1869, and after several vicissitudes and some modifications the bill was accorded by the Commons. It received the royal assent on July 26, 1869, but it was provided that it should not take effect till Jan. 1, 1871, which, therefore, is the proper date of the disestablishment of the Irish Church.

Dishonor, in commerce and banking, a default of payment. If, when a bill is presented for acceptance, the person on whom it is drawn refuses to accept it, or if, when presented for payment, the acceptor refuses to pay it, or if a promissory note is not paid when it falls due, such default is termed dishonor; and the holder of the bill or note is bound to give notice to the parties who drew the bill or note, or to those who have negotiated it. This notice is called notice of dishonor or protest, and if the holder fails to give notice of the same, the parties who would otherwise have been responsible are discharged from their liability.

Disinfection, the act of purifying from infectious and contagious matter. Agents which can destroy the specific poisons of infectious diseases and prevent them from spreading are called disinfectants. The action of disinfectants is therefore analogous to that of antiseptics, and consists of the destruction of low forms of life.

Thermal and chemical means are used in disinfection. Hot air and steam are included in thermal disinfection, while chemical disinfection destroys the infective particles by applying substances of a chemical nature. Heat, and especially fire, is the best disinfectant. Clothing which can be boiled without injury is thereby deprived of infectious germs. Cold is a natural disinfectant. The first frost kills an epidemic of yellow fever; but a temperature of zero does not kill the infection of anthrax, typhoid, tuberculosis, or smallpox.

Among the most important disinfectants for practical purposes are chlorine, carbolic acid, sulphurous acid, Condy's green and red fluids, containing respectively manganate and permanganate of potash, and Burnett's fluid, containing chloride of zinc.

Dislocation, a surgical term applied to cases in which the articulating surfaces of the bones have been forced out of their proper places. The particular dislocation takes its name either from the joint itself or its furthest bone, and is called compound when accompanied with an external wound. In geology it signifies the displacement of parts of rocks or portions of strata from the situations they originally occupied.

Dismal Swamp, a large tract of marshy land, beginning a little S. of Norfolk, Va., and extending into North Carolina; containing 150,000 acres; 30 miles long, from N. to S., and 10 broad. This tract was entirely covered with trees, with almost impervious brush-wood between them, but it has now in part been cleared and drained. In the midst of the swamp is Drummond's Lake, seven miles in length, the scene of Thomas Moore's "Lake of the Dismal Swamp." In 1899, the Dismal Swamp canal, connecting Chesapeake Bay with Albemarle Sound, was reopened for navigation. It extends from the village of Deep Creek, Va., to South Mills, N. C., a distance of 22 miles; and is one of the most important links in the chain of inland waterways extending along the coast from New York to Florida, as it enables ships to avoid the dangers of Cape Hatteras.

Dispensation, the act by which an exception is made to the rigor of the law in favor of some person. The Pope, according to Roman Catholic view, may release from all oaths or vows, and may sanction a marriage within the prohibited degrees of the Mosaic law, or exempt from obedience to the disciplinary enactments of the canon law. In England the monarch claimed, in former times, a similar dispensing power in civil law, but the prerogative was so much abused by James II. that it was abolished by the Bill of Rights. The power of commuting sentences in capital cases is the only form in which the dispensing power still exists in England.

D'Israeli, Isaac, an English historian; father of Lord Beaconsfield (q. v.); born in Enfield, Middlesex, 1766. His father, Benjamin D'Israeli, was the descendant of a family of Spanish Jews which had settled at Venice in the 15th century to escape the persecution of the Inquisition. He went to England in 1748, made a large fortune by commerce, and married a lady, also of Jewish extraction. The son was intended to follow a similar career to his father, but from the first manifested an invincible repugnance to commercial pursuits, and notwithstanding all the remonstrances of his father insisted on devoting himself to literature. He died Jan. 9, 1848.

Dissection, the act or science of cutting up or dissecting an animal or vegetable body for the purpose of examining the structure and use of its several organs and tissues.

Dissenters, the common name by which in Great Britain all Christian denominations, excepting that of the Established Churches, are usually designated, though in acts of Parliament it generally includes only Protestant dissenters, Roman Catholics being referred to under the specific name. The most important bodies of English dissenters are the different bodies of Methodists, the Congregationalists, and the Baptists; and of Scotch dissenters, the Free Church and the United Presbyterian Church. The Nonconformists were dissenters from the English Church.

Dissolution. In English politics, the act of dissolving or putting an end to the existence of a Parliament. It differs from a prorogation, which is the continuance of a Parliament from one session to another, and from an adjournment, which is its continuance from one day to another. A dissolution is the civil death of a Parliament; and this may be effected in three ways: (1) By the will of the sovereign. (2) By the demise of the crown. (3) A Parliament may be dissolved or expire by length of time. As the constitution now stands the Parliament must expire, or die a natural death, at the end of every seventh year, if not sooner dissolved by the royal prerogative.

Dissolving Views, pictures painted on glass slides, which can be made to appear or disappear at pleasure by a peculiar arrangement of the magic-lantern or the stereopticon.

Distaff, a cleft stick about 3 feet long, on which wool or carded cotton was wound in the ancient mode of spinning. The distaff was held under the left arm, and the fibers of cotton drawn from it were twisted spirally by the forefinger and thumb of the right hand. The thread, as it was spun, was wound on a reel which was suspended from and revolved with the thread during spinning.

Distemper, a disease of the dog, commonly considered as of a catarrhal nature.

Distillation, an important process in the arts; consisting essentially in converting a liquid into vapor in a close vessel, by means of heat, and then conveying the vapor into another cool vessel, where it is condensed again into a liquid. When applied to a solid the process is called sublimation.

Distinguished Service Order, an order instituted by Queen Victoria on Sept. 6, 1886, for the reward of naval and military service. Foreign officers who have been associated in naval and military operations with British forces are eligible to be honorary members, and the order ranks next to that of the Indian Empire.

Distoma, a genus of trematode or suctorial parasitical worms or flukes, inhabiting various parts of different animals. The common liver fluke, inhabits the gall-bladder or ducts of the liver in sheep, and is the cause of the disease known as the rot. They have also been discovered in man (though rarely), the horse, the hog, the rabbit, birds, etc.

Distress, in law, is the taking of a personal chattel of a wrong-doer or a debtor, in order to obtain satisfaction for the wrong done, or for debt or service due. Another description of distress is that of attachment, to compel a party to appear before a court when summoned for this purpose. State laws usually exempt from levy household goods to a certain value.

Distribution, in political economy, the method in which the products of industry are shared among the people concerned.

District, Congressional, in the United States, a divison of a State according to its population, sufficient in size to entitle it to a representative in Congress. The ratio of representation is established by Congress every 10 years, and is based on the total population as reported by the last preceding census. The action of the Federal Government ceases with the fixing of the rate, and each State establishes the boundaries of its own districts by an act of its Legislature. There is, therefore, a decennial change in the number and frequently in the boundaries of the districts, and party politics have much to do with mapping them out.

District Court, a court having cognizance of cases arising within a certain defined district, more specifically as described below. In 1901 the United States was divided into 76 districts for judicial purposes, each State in the Union containing at least one district, and some of them three. For each district there are a judge, a district attorney, a marshal, and deputy marshals. They constitute the officers of the district courts. These tribunals have charge of the administration of justice in cases of offense against the Federal Government.

District of Columbia, the Federal district of the United States, containing the National capital. Named for Columbus. Fixed as seat of United States Government in 1790 by an act of Congress. Formed out of Washington Co., Md. (64 square miles), a portion of Virginian territory offered the government being not now included. The United States Government removed to the District in 1800. The government is vested in three commissioners, one of whom must be an army officer, and all of whom are appointed by the President and confirmed by the Senate. Congress makes all laws for the District. Citizens of the District have no vote for National officers. There is but one government for the entire District, with which the city of WASHINGTON is now considered as coextensive.

Ditch, a trench or fosse on the outside of a fortification or earthwork, serving as an obstacle to the assailant and furnishing earth for the parapet. They were common features of the Civil War.

Ditch, in agriculture, a trench usually made along the sides of fields, so that all the drains may be led into it, or along the top of a field to divert surface water.

Diuretics, medicines which cause an increase of the function of the kidneys, and consequently augment the quantity of the urine.

Divan, a Persian word having several significations. It is used in Turkey for the highest Council of State, the Turkish ministry; and for a large hall for the reception of visitors. Among several Oriental nations this name is given to certain collections of lyric poems by one author. The "divans" of Hafiz and Saadi, the Persian Poets, are among the most important. In Western Europe the term is applied to a cafe, and to a kind of cushioned seat.

Diver, one of a family of birds, remarkable for their power and habit of diving. The neck is long, thus presenting a great affinity to the grebes; the tail is very short and rounded; the wings short; the bill straight, strong, and pointed.

Dives (rich), the name popularly adopted for the "rich man" in the parable of the rich man and Lazarus, from the Vulgate translation.

Divide, The Great, a popular designation for a certain stretch of W. country in the United States.

Dividend, in arithmetic, a number which has to be divided by another. In bankruptcy, the fractional part of the assets of a bankrupt which is paid to the creditor in proportion to the amount of the debt which he has proved against the estate of the debtor. In commerce, the sum periodically payable as interest on loans, debentures, etc., or that periodically distributed as profit on the capital of a railway or other company.

Divination, the art or act of foretelling future events, or discovering things secret or obscure, by the aid of superior beings, or by other than human means; prescience; presage; prediction.

Divine Right, the claim set up by some sovereigns or their supporters to the absolute obedience of subjects as ruling by appointment of God, insomuch that, though they may themselves submit to restrictions on their authority, yet subjects endeavoring to enforce those restrictions by resistance to their sovereign's acts are considered guilty of a sin. This doctrine, so celebrated in English constitutional history, especially in the time of the Stuarts, is upheld by the German emperor, and of course by the Czar, and other autocrats.

Diving Apparatus, contrivances by means of which divers are enabled to remain a considerable time under water. As the most skillful divers are unable to remain under water more than two or three minutes without artificial respiration, means have been devised by hermetically sealed helmets, diving bells, and diving dresses, so that they can stay for several hours at a time at considerable depths of water and at the same time carry on their work.

Divining Rod, a forked rod or branch, by means of which it is pretended to the foolish and superstitious that the presence of water, minerals, etc., underground can be detected. When used, the rod, which is carried slowly along in suspension, will, as is affirmed, dip and point toward the ground when brought over the spot where the concealed water or mineral is to be found.

Division, in arithmetic, the dividing of a number or quantity into any parts assigned; one of the four fundamental rules, the object of which is to find how often one number is contained in another.

Division, in military matters, a portion of an army consisting of two or more brigades, composed of the various arms of the service, and commanded by a general officer. In the navy a select number of ships in a fleet or squadron of men-of-war.

A DIVING DRESS.

Division, the mode of determining a question at the end of a debate in a legislative body.

Divorce, the disruption, by the act of law, of the conjugal tie, made by a competent court on due cause shown. In the United States, jurisdiction in divorce cases is usually conferred on the law courts by the statutes in the different States, there being no ecclesiastical courts in the English sense of that term. The causes of divorce enumerated in these statutes are by no means uniform in relation to the various States, though more numerous in the Western States than in the Eastern. In most of the States divorce may be granted on any of the following grounds: Adultery, conviction of felony, cruel and inhuman treatment, wilful desertion for periods varying from one to three years, habitual drunkenness, impotency, or neglect to support the wife.

The want of harmony in the legislation of the different States on this subject has led to very great confusion and conflict in regard to the rights and liabilities growing out of divorce against non-residents of the State where granted, and some uniform system of laws on the subject is greatly needed. As the jurisdiction of Congress over the subject is very doubtful, uniformity can apparently be secured only by an amendment to the Constitution of the United States, or by the concurrent action of the various State Legislatures.

Dix, John Adams, an American statesman and soldier; born in Boscawen, N. H., July 24, 1798. In 1861 he was appointed Secretary of the Treasury by President Buchanan, and his appointment led to the breaking of a financial deadlock in the affairs of the government. When he became secretary there were two revenue cutters at New Orleans, and he ordered them to New York. The captain of one refused to obey his order, and Dix telegraphed to put him under arrest, adding the statement which has made him famous, "If any one attempts to haul down the American flag, shoot him on the spot." At the outbreak of the Civil War, he was elected president of the Union Defense Committee, and organized 17 regiments. He was commissioned a Major-General of volunteers, and through his active measures saved Maryland to the Union cause. He was elected governor of New York in 1872, but was defeated on a renomination in 1874. He died in New York city, April 21, 1879.

Dixie, the name of the celebrated air, "Dixie," to which Southern soldiers marched to battle in the Civil War, and which is now recognized, with "Yankee Doodle," as one of our national airs. The legend, probably a true one, is that Dixie was a slave-owner on Manhattan Island, New York, who treated his slaves well. They were sold to Southern masters, and the melody "Dixie" originated in their plaintive regret for their old home. The words, of course, were added subsequently. A proposition in September, 1903, at a national re-union of Confederate veterans to make the wording of Dixie "more dignified," evoked the fiercest condemnation.

Dixon, James, an American lawyer and statesman; born in Enfield, Conn., Aug. 5, 1814. He graduated at Williams College, and was a member of the United States Senate from 1857 to 1869. He excelled as a writer of both prose and poetry. He died in Hartford, Conn., March 27, 1873.

Dixon, Richard Watson, an English poet and historian; born in London in 1833. He is a minister of the English Church. He was associated with Burne-Jones, Rossetti, and Morris, in founding the "Oxford and Cambridge Magazine," the chief organ of the pre-Raphaelite school.

Dixon, William Hepworth, an English author; born in Manchester, June 30, 1821. In 1853, after having been a contributor, he became chief editor of the "Athenæum," a post which he retained till 1869. During this period he published several very popular works. After his retirement from the "Athenæum," and in the last 10 years of his life, he gave to the world about 25 volumes of history, travel, and fiction. He died in London, Dec. 27, 1879.

Dixon Entrance, a strait on the W. coast of North America, separating Queen Charlotte Islands from the Prince of Wales Archipelago, and so dividing British territory from a part of Alaska.

Dnieper, a river of Russia which rises in the government of Smolensk, flows first S. W., then S. E., and latterly again S. W. to the Black Sea. It begins to be navigable a little above Smolensk, and has a total length, including windings, of 1,230 miles.

Dniester, a river of Europe, which has its source in the Carpathian Mountains, in Austrian Galicia, enters Russia at Chotin, and empties itself into the Black Sea after a course of about 750 miles. Its navigation is difficult on account of frequent shallows and rapids.

Dobrentei, Gabor, a Hungarian author; born in Nagyscollos, Dec. 1, 1786. In 1810 he established at Klausenburg the Transylvanian Museum, in 1820 settled in Pest, and was a founder and secretary of the Hungarian Academy. He died near Budapest, March 28, 1851.

Dobrovsky, Joseph, a Bohemian critic, historian, and philologist; born in Gyermet, Hungary, Aug. 17, 1753. He died in Brunn, Jan. 6, 1829.

Dobrudja, The, a territory forming part of the kingdom of Rumania, included between the Danube, which forms its boundary on the W. and N., the Black Sea on the E., and on the S. by a line stretching from Silistria to a point a few miles S. of Magnalia. The principal town is Babadagh. Pop. about 100,000.

Dobson, Austin, an English poet; born in Plymouth, Jan. 18, 1840. Intended for a civil engineer, he accepted a place under the Board of Trade. His poems are inimitable in their artistic finish and grace of fancy.

Dock, a name applied to different plants belonging to the rhubarb family. They are very troublesome as weeds.

Dock, an enclosure for the accommodation of shipping. Docks may be divided into two principal classes, viz., wet docks and dry docks.

Wet docks are used almost exclusively for purposes of marine commerce. Where the range of tide is more than 10 to 12 feet, docked vessels are kept alongside of the quay or dock at as nearly a uniform elevation as practicable by means of enclosing requisite water areas and preventing by suitable means the outflow of water during ebb tides. Such docks are frequently approached through what is called a tidal basin, or sometimes a half-tide basin, the latter expression indicating the fact that ships may freely enter or leave such basins during the upper half of the tidal range.

Floating dry docks are composed of one or more large pontoons, so constructed and arranged as to carry along each side pumps and other appliances on suitable stiff frames. When the pontoons are filled with water they sink, and when water is pumped out of them they rise to a height corresponding to the amount of water taken out. The mode of operation of the floating dry dock is as follows: The pontoons are filled with water till they sink to a depth a little greater than the draught of the vessel to be docked. The vessel is then floated over the submerged pontoons and between the frames till it is placed accurately in position over the axis of the floating dock. Water is then pumped out of the pontoons gradually and uniformly so as to keep the ship on an even keel. As the ship rises out of the water she is steadied by shores from the frames over the pontoons. The pumping is continued till the ship is raised wholly above water, if it is desired to expose her complete hull.

Docket, in law, an alphabetical list of cases in a court, or a catalogue of the names of the parties who have suits pending in a court.

Dock Warrants, orders for goods kept in the warehouses connected with a dock. They are granted by the proper officer at the dock to the importer in favor of any one that he may name.

Doctor, properly, a teacher or instructor; one so skilled in some particular art or science as to be able to communicate it to others. It is generally believed to have been first adopted as a distinctive title in the 12th century, and to have originated with the University of Bologna. The University of Paris followed immediately after, and, in 1145, conferred the degree of doctor of divinity on Peter Lombard. In England the degree of doctor was not introduced in the universities till the reign of John, or Henry III. In modern times, the title of doctor forms generally the highest degree in the faculties of theology, law, and medicine. In this country the title is conferred upon those of eminent learning or ability in their profession, without demanding from them any trial; excepting in the medical profession, where it is bestowed at the end of a course of study.

In Scripture, a doctor of the law may perhaps be distinguished from scribe, as rather teaching orally than giving written opinions. Doctors of the law were mostly of the sect of the Pharisees, but are distinguished from that sect in Luke v: 17, where it appears that the novelty of Jesus's teaching drew together a great company both of Pharisees and doctors of the law. The Jewish teachers were invested with the dignity of doctor by receiving into their hands a key and a tablet-book.

Doctor's Commons, in England, the common name for the courts and offices occupied by the body incorporated in 1768 under the title of "The College of Doctors of Law exercent in the Ecclesiastical and Admiralty Courts." These courts are in London.

Doctors of the Church, a name given to four of the Greek fathers (Athanasius, Basil, Gregory Nazianzen, and Chrysostom) and three of the Latin Fathers (Jerome, Augustine, and Gregory the Great). The Roman Catholic Church, however, recognizes 17 "Doctors of the Church," including besides those already mentioned, Chrysologus, Leo, Isidore, Peter Damian, Anselm, Bernard of Clairvaux, Thomas Aquinas, Bonaventura, and Alphonsus of Liguori. The title is conferred only after death.

Doddridge, Philip, an English Nonconformist clergyman and author; born in London, June 26, 1702; died Oct. 26, 1751, in Lisbon, whither he had gone for the benefit of his health. Doddridge was at once liberal and evangelical, and with all his religious earnestness and enthusiasm had humanity enough for such levities as cards and tobacco. His principal work is "The Rise and Progress of Religion in the Soul." His hymns have carried his name over the English-speaking religious world, perhaps the best known being "Hark, the glad sound, the Saviour comes," and "O God of Bethel, by whose hand."

Dodds, Alfred Amedee, a French military officer; born in St. Louis, Senegal, Feb. 6, 1842; was educated at the Lyceum of Carcassonne and at the military school of Saint-Cyr; entered the French army as sub-lieutenant in 1864. In 1894 he commanded the expedition which resulted in the conquest of Dahomey and the dethronement of King Behanzen. He was appointed commander-in-chief of the French forces in Indo-China in 1896.

Dodge, Grenville Mellen, an American military officer; born in Danvers, Mass., April 12, 1831; educated at Partridge's Military Academy and Norwich University. He served during the Civil War with honor and succeeded Rosecrans as commander of the Department of Missouri. After the war he was chief engineer of the Union Pacific railroad and superintended its construction, and was a member of Congress from Iowa in 1867–1869. He succeeded General Sherman as president of the Association of the Army of the Tennessee in 1894, and was also president of the New York Commandery of the Loyal Legion. In 1898 he was made chairman of the President's Commission to inquire into the management of the War Department in the war with Spain.

Dodge, Mary Abigail, an American journalist and author; born in Hamilton, Mass., in 1838. For several years she was instructor in the High School at Hartford, Conn. From 1865 to 1867 she was one of the editors of "Our Young Folks." Besides numerous contributions to current literature, she has written, under the pseudonym of "Gail Hamilton" a number of well known books. She died in Hamilton, Mass., Aug. 17, 1896.

Dodge, Mary Elizabeth Mapes, an American editor, author, and poet; born in New York city in 1838. Since 1873 she has been the editor of "St. Nicholas" (magazine), New York. Her best-known work is "Hans Brinker, or the Silver Skates" (1876), which has gone through many editions and been translated into five foreign languages.

Dodge, Richard Irving, an American military officer and writer; born in Huntsville, N. C., May 19, 1827. He graduated at the United States Military Academy in 1848. He died in Sackett's Harbor, N. Y., June 16, 1895.

Dodge, Theodore Ayrault, an American military officer and writer; born in Pittsfield, Mass., May 28, 1842; received his military education abroad. Returning to the United States, he enlisted (1861) in the Union service as a private, attaining the rank of colonel. He has written a number of historical works.

Dodge, William Earle, an American capitalist; born in Hartford, Conn., Sept. 4, 1805. He received a common school education, entered the wholesale drygoods business, retiring in 1879 with a large fortune. He was an ardent friend of the freedman. He died in New York city Feb. 9, 1883.

Dodge, William Earle, an American capitalist; born in New York city Feb. 15, 1832. He succeeded to his father's interests, and became active in mining and manufacturing. His public benefactions and labors have been numerous, he being president of the Evangelical Alliance, chairman of the National Committee of Arbitration, etc. He died in August, 1903.

Dodgson, Charles Lutwidge, an English mathematician and author, and better known by his pen-name of Lewis Carrol; born in 1833; received his academical education at Christ Church, Oxford. He became famous as the author of "Alice's Adventures in Wonderland," written for the young. Equally delightful is the continuation of "Alice's Adventures," narrated in "Through the Looking-glass and What Alice Found There," a striking exception to the common rule as to the inferiority of continuations. He died in Guilford, Jan. 14, 1898.

Dodo, a large bird that inhabited Mauritius in great numbers when that island was colonized in 1644 by the Dutch, but which was totally exterminated within 50 years from that date, the last record of its occurrence being in the year 1681. The dodo was a heavy bird, bigger than a turkey, incapable of flight, and entirely unlike the pigeons in general appearance, although it belonged to the same order.

Dog, a digitigrade, carnivorous animal, forming the type of the genus Canis, which includes also the wolf, jackal, and fox. It would require a volume to give a proper account of the natural history of this noble animal, which seems to have been formed expressly to be a companion to man. Dogs are found in all parts of the world, with the exception of some islands in the Pacific Ocean, but attain greatest perfection in temperate climates. These animals form an important article of food among many nations. In China, the Society Islands, etc., young puppies are considered a great delicacy, and are said by Europeans who have overcome their prejudices to be very sweet and palatable. This taste for dog's flesh is of very early origin. The ancients regarded a young and fat dog as excellent food.

Dogbane, an American plant found from Canada to the Carolinas. The whole plant is milky; the root is intensely bitter and nauseous. Another species yields a useful fiber, and is known as Canada or Indian hemp.

Dog Days, the name applied by the ancients to a period of about 40 days, the hottest season of the year, at the time of the heliacal rising of Sirius, the dog-star. The time of the rising is now, owing to the precession of the equinoxes, different from what it was to the ancients, and the dog days are now counted from July 3 to August 11, that is, 20 days before and 20 days after the heliacal rising.

Doge, the title borne by the chief magistrate in the former Italian republics of Venice and Genoa.

Dogfish, a species of fish like small sharks, but have the anal fin nearer the head than the second dorsal one. Of the known species, which are about 11, the small-spotted dogfish, the large-spotted dogfish, and the black-mouthed dogfish are the best known.

Dogma, in the Septuagint and New Testament, signifies a decree or precept; by classical Greek writers it is used in the sense of a philosophical tenet. Its general meaning is a principle or maxim laid down in the form of a positive assertion, and hence "the Dogmatic Method" is the method pursued in such a science as mathematics, which starts from axioms and postulates, and deduces everything from these by means of proofs. The word dogma is especially used to signify the whole (or any one) of the doctrinal forms in which the religious experience of the Christian Church has from time to time authoritatively expressed itself, as distinguished from the opinions held by Church-teachers individually.

Dog Star. A name for Sirius, the star which gives its name to the dog days.

Dogwatch, on shipboard, a name given to each of two watches of two hours each instead of four, adopted for the purpose of varying the hours of watches kept by each part of the crew during the 24 hours, otherwise the same watch would invariably fall to the same men.

Dogwood, a common name for plants of the genus Cornus. Cornus florida is a common American shrub, growing 6–10 feet in height, and bearing beautiful white clusters of flowers, enlivening the hedges and bush of the warmer portion of the United States. It is productive of a bark much valued as an anti-periodic in ague, etc., and its wood, which is hard, white, and close grained, is useful in various ways.

Dohrn, Anton, a German zoologist; born in Stettin, Dec. 29, 1849; studied at Konigsberg, Bonn, Jena, and Berlin, lectured for a time on zoölogy at Jena, and in 1870 founded the great zoölogical station at Naples.

Dolbear, Amos Emerson, an American physicist and inventor; born in Norwich, Conn., Nov. 10, 1837; was a valuable contributor to science. He patented the magneto-electric telephone and the static telephone in 1879.

Dolci, Carlo or **Carlino,** a painter of the Florentine school; born in Florence in 1616; died Jan. 17, 1686.

Dolcinites, (from Dolcino, their founder), a Christian sect which arose in Piedmont in 1304, under the leadership of Dolcino, who was opposed to the papacy, and otherwise held tenets like those of the spiritual Franciscans and the Paterines of Lombardy.

Doldrums, among seamen, the parts of the ocean near the equator that abound in calms, squalls, and light baffling winds.

Dole, Nathan Haskell, an American editor, author and translator; born in Chelsea, Mass., Aug. 31, 1852. He was graduated from Harvard University in 1874, and after several years of teaching, engaged in literary work in Boston and New York. He has lectured widely before women's clubs and other institutions, having prepared courses of papers on English, Russian, Italian, and French literatures. In 1882 he married Helen James Bennett.

Dole, Sanford Ballard, an American statesman; born in Honolulu, Hawaii, April 23, 1844, his parents being missionaries. He received his early education in Poduban College, Honolulu, and completed his studies at Williams College, Williamstown, Mass. He studied law in Boston and was admitted to the bar in 1873, returning in the same year to Hawaii. In 1844 he was made a member of the Legislature and again in 1889. He had been in the meantime, in 1887, appointed an Associate Judge of the Supreme Court, under the monarchy, which post he resigned to accept the leadership of the revolution that overturned the monarchy in January, 1893, and established a provisional government on the 17th of that month. The proposition for annexation of the islands being rejected by President Cleveland, a constitutional convention was held in Honolulu, and on July 4, 1893, a republic was formally proclaimed, of which Judge Dole was elected president. After the annexation of Hawaii in 1898, he was one of the five commissioners appointed by President McKinley to recommend to Congress such legislation concerning the Hawaiian Islands as they should deem best, and was subsequently appointed governor of the islands.

Dolet, Etienne, "the martyr of the Renaissance"; born in Orleans, France, in 1509. At the age of 12 Dolet went to the University of Paris, where his attention was directed to the study which became the chief interest of his life — the writings of Cicero. He was found guilty of heresy on a charge mainly based on an alleged mistranslation of Plato, in which he was accused of denying the immortality of the soul. After two years' imprisonment, Dolet was burned in the Palace Maubert, Paris, Aug. 3, 1546.

Dolgoruky, Katharina, Princess, the favorite of the Czar. Alexander II., who married her in July, 1880, after the death of his first wife, Marie. Their children hold high positions, but are not publicly recognized as of the imperial house.

Dolichocephalic, long-headed; an epithet applied to those human skulls in which the transverse diameter or width from side to side bears a less proportion to the longitudinal diameter, or width from front to back than 8 to 10.

Doll, a favorite plaything of children, found in the greatest variety of form and decoration. Of late years "doll shows," or bazaars, have been very popular in the United States, where hundreds of dolls are put on exhibition and sold, generally in aid of some charity. The phonograph doll, invented by Edison, created great interest when it was first introduced.

Dollar, a favorite coin found under different names in almost every part of the globe. The following are the principal dollars in circulation: (1) A gold coin of the United States; weight, 25.8 grains; fineness, .900; now no longer coined. (2) A silver coin of the United States. (3) A silver coin current in Mexico; fineness, .900; weight, 27.067 grammes, or 417.7 grains. (4) The unit of value in Canada, represented by paper only, Canada having no coinage of its own. (5) The English name of a silver coin in circulation in many other countries, as Norway, Sweden, Denmark, etc. The sign $, now generally used to signify a dollar, is commonly supposed to date from the time of the celebrated Pillar dollar of Spain. This dollar was known as the Piece of Eight (meaning eight reals), and the curved portion of the sign is a rude representation of the figure 8. The two vertical strokes are thought to be emblematical of the Pillars of Hercules, which were stamped upon the coin itself.

Dollinger, John Joseph Ignatius, a German Catholic priest and historian; born in Bamberg, Bavaria, Feb. 28, 1799. He won distinction as a learned writer on Church history. He was a vigorous advocate for the separation of the Church from the State. He refused assent to papal infallibility, and was excommunicated, but received honorary degrees and other tokens of esteem from foreign instiutions. He died in Munich, Jan. 10, 890.

Dolman, a long robe worn by the Turks as an upper garment. It is pen in front, and has narrow sleeves. t has given its name to a kind of oose jacket worn by ladies.

Dolmen, a name sometimes used s equivalent to cromlech, sometimes n a distinctive sense. Sir John Lubock maintains that cromlech should e applied to a stone circle, dolmen o a stone chamber.

Dolomite, a mineral species, specimens of which occur crystallized, ranular, compact and fine grained, olumnar and flexible. It has been ound in the United States, and elsehere.

Dolphin, a cetaceous animal, formng the type of a family which inludes also the porpoises and narwhal. Dolphins are cosmopolite animals inabiting every sea from the equator to he poles; they are gregarious, and wim with extraordinary velocity. The nimal has to come to the surface at hort intervals to breathe. The strucure of the ear renders the sense of earing very acute, and the animal is bserved to be attracted by regular or armonious sounds. One or two young re produced by the female, who sucles and watches them with great care nd anxiety, long after they have acuired considerable size. The antics f the dolphins as they race with teamers are an attraction for travelrs near the American coast.

Dolphin, Black, a species of plantouse, which infests the bean, and ofen does considerable injury to crops, ucking the juices of the plants and reventing the development of floweruds.

Dolphin, The, a dispatch boat of ne United States navy, which did ood service in the war with Spain. he was one of the three small vessels hich succeeded early in May, 1898, n landing rifles, ammunition, and suplies on the Cuban coast. On June 10 ne assisted in landing 600 American arines from the transport "Panther" ear the mouth of Guantanamo harbor.

Domain, Public, in the United tates, the vacant public land open settlement upon complying with leal requirements.

Domboc, (book of dooms or sentences), the code of laws compiled by King Alfred, who made few if any original laws, but contented himself with restoring, renovating, and improving those which he found already in existence.

Dome, though often used synonymously with cupola, a dome, in the stricter sense, signifies the external part of the spherical or polygonal roof, of which the cupola is the internal part. In Italian usage, however, it has a wider signification, being used to denote the cathedral or chief church of a town, the house par excellence, or house of God. The cause of the name of the building being thus applied to the form of the roof which covered it arose from the fact that the chief churches of Italy were at one period almost universally so roofed. The dome of the Pantheon is still probably the most magnificent dome in existence. The dome of St. Peter's, Rome; of St. Paul's, London; of the Capitol, Washington; are notable examples also.

Domenichino, a celebrated Italian painter, whose real name was DOMENICO ZAMPIERI; born in Bologna, 1851. He studied first under Denis Calvert, and then in the school of the Caracci. At about the age of 20 he went to Rome, where he acquired a great reputation, especially by his fresco of the "Flagellation of St. Andrew." He spent the latter part of his life at Naples, where he died April 15, 1641.

Dome, Observatory, the roof or covering over the part of an astronomical observatory which contains an equatorial, altazimuth, heliometer, or any other instrument which it is desired to point to any part of the heavens.

Dome of the Rock, a name conferred on the Mosque of Omar, Jerusalem. It stands on Mount Moriah, on the site once occupied by the Temple of Solomon. Immediately under its dome an irregular-shaped rock projects above the pavement. This rock was the scene of many scriptural events.

Domesday Book, one of the most ancient and valuable records of England, framed by order of William the Conqueror, to serve as the register from which judgment was to be given upon the value, tenure, and service of lands therein described.

Domestic Architecture, a branch of the building art which has special reference to houses, villas, and edifices designed primarily for dwelling purposes.

Domicile. 1. The place of residence of an individual or a family; the place where one habitually resides, and which he looks upon as his home, as distinguished from places where one resides temporarily or occasionally.

2. The length of time during which a party must have resided in a State in order to give jurisdiction in civil causes, the period varying in the different States.

Dominic, Saint, the founder of the order of the Dominicans; born in Calahorra, in Old Castile, in 1170. Dominic died in Bologna in 1221, and was canonized in 1234 by Pope Gregory IX. St. Dominic is usually considered the founder of the Inquisition, but this claim is denied, on the ground that two Cistercian monks were appointed inquisitors in 1198.

Dominica, the largest and extreme S. British island in the Leeward group of the Lesser Antilles; midway between the French islands of Martinique and Guadeloupe; area, 291 square miles; pop. (1901) 28,894, mostly negro. The Caribs, who occupy a large reserve on the Windward side of the island, are gradually becoming so intermixed with the negroes that the pure Carib, the "Franc Caribs," will soon be non-existent. They are very peaceable and retiring, and live on fish, and vegetables and fruits which they cultivate. Dominica is of volcanic origin, with many hot and sulphurous springs. The capital of the island is Roseau, a port on the W. coast, with a population of 4,500. Dominica is a member of the Leeward Islands colony, but has its own president, treasury, and local legislature. The majority of the inhabitants are Roman Catholics. Dominica was discovered by Columbus, on his second voyage, on Sunday (whence its name Dominica — "the Lord's Day"), Nov. 3, 1493. It was a source of strife to French and English till 1648, when it was formally declared by the treaty of Aix-la-Chapelle a neutral island; but in 1759 it was captured by England, and in 1763 ceded by France who, however, held it again in 1778-1783, and in 1802–1814, when it was finally restored to England.

Dominican. 1. One of a religious order called in some places Prædicantes or Preaching Friars, and in France Jacobins, from their first convent in Paris being in the Rue St Jacobin. They took their ordinary name from their founder, Dominic de Guzman (afterward canonized under the name of St. Dominic). They were under a vow of absolute poverty. In England they were called Black Friars, and in 1276 the Corporation of London gave them two streets near the Thames, where they erected a large convent, whence that part is still called Blackfriars. The Dominicans always took a principal part in the Inquisition.

2. One of an order of nuns founded by St. Dominic under the same rules as the friars, but devoted to industry

3. One of an order of knights founded by St. Dominic, for the purpose of putting down heresy by force of arms

To the friars, nuns, and knight mentioned above, St. Dominic added in 1221, the Tertiaries—persons who without forsaking secular life or even the marriage tie, connected themselve with the order by undertaking certai obligations.

Domino, the name formerly given to the hood or cape worn in winter b priests while officiating in cold edifices It is now used to signify a masquerad costume, consisting of an ample cloak with wide sleeves and a hood.

Dominus, the Latin word which we commonly render by "lord," bu which more properly signifies the master of a house, and his eldest son, a opposed to slave. The term is applied by Christians to God and to Jesus a Himself God. The Scottish "dominie," in the sense of schoolmaster, i of course taken from it, as is the sam term in America.

Domitian, Titus Flavius Augustus, the last of the "Twelv Cæsars," and youngest son of the Emperor Vespasian; born in 51 A. D. H kept entirely apart from public life being intrusted with no employmen When proclaimed emperor, on th death of Titus, he proved the wisdom of the restraint which had been pu upon him by the ferocity in which he ultimately revelled. After escapng from many conspiracies, the monster fell, on Sept. 18, A. D. 96, the victim of a plot in which his wife, Domitia, bore a prominent part.

Domremy la Pucelle, the birthplace of Joan of Arc, a small French village, Department of the Vosges, 7 miles N. of Neufchateau.

Don, (ancient Tanais), a river of Russia, which issues from Lake Ivan-Ozero, in the government of Tula; and flows S. E. through governments Riazan, Tambov, Voronej, and Don Cossacks, to within 37 miles of the Volga, where it turns abruptly S. W. or 236 miles, and falls into the Sea f Azof; whole course nearly 900 miles.

Don, or **Dom,** (lord), a title orignally assumed by the popes, from whom it descended to bishops and othr dignitaries, and finally to monks. In Portugal and Brazil it is now the universal title of the higher classes. The Spanish don was originally conined to the nobility, but is now betowed by courtesy as indiscriminatey as the English Mr. or Esq. The eminine is dona.

Donaldson, Washington H., an American aeronaut; born in Philadelphia, Pa., in 1840. He made himself amous all over the United States by his daring and reckless ascensions. He tried to cross the Atlantic in an normous balloon, but failed. On July 15, 1875, he made an ascension from the lake front in Chicago and neither Donaldson nor his balloon was ever een thereafter.

Donatello, (properly, DONATO DI BETTO BARDI), one of the revivors of the art of sculpture in Italy; born in Florence between 1382 and 1387; died in Florence in 1466.

Donati, Giambattista, an Italian astronomer; born in Pisa in 1826; was appointed in 1852 assistant at the obervatory in Florence, of which he beame director in 1864. Here he disovered the brilliant comet of 1858, which is known as Donati's comet. He afterward was instrumental in erectng the fine observatory at Arcetri, near Florence. He died Sept. 20, 1873.

Donatist, one of a sect of schismatics in Africa, the followers of Donatus, Bishop of Casa Nigra, in Numidia. The Donastists held that Christ, though of the same substance with the Father, was less than the Father; they also denied the infallibility of the Church, which they said had fallen away in many particulars. They were finally suppressed in the 6th century by Pope Gregory the Great.

Donauworth, an ancient town of Bavaria; at the confluence of the Wornitz and the Danube, 25 miles N. N. W. of Augsburg. In 1606 the inhabitants, who had adopted the Reformed doctrines, attacked a Roman Catholic procession of the Host, for which in 1607 the town was placed under the ban of the empire, and severely punished in consequence. In the Thirty Years' War that followed it was twice stormed by the Swedes and by the Bavarians. It is likewise associated with the name of Marlborough, who carried the intrenched camp of the French and Bavarians near here in 1704; and, on Oct. 6, 1805, the French, under Soult, obtained a victory here over the Austrians, under Mack.

Doncaster, a municipal borough in Yorkshire, England. It has long been famous for its annual races, begun in 1703, and held a mile S. E. of the town in the second week of September. On an eminence 5 miles W. S. W. of Doncaster are the ruins of Conisborough Castle, the stronghold of Athelstan in Scott's "Ivanhoe." Pop. (1900) est. 25,000.

Donelson, Andrew Jackson, an American diplomatist; born near Nashville, Tenn., Aug. 25, 1800. He graduated at the United States Military Academy in 1820, and entered the army as a lieutenant of engineers. In 1822 he resigned, studied law, and also engaged in cotton raising in his native State. He filled a number of responsible offices; was candidate of the American party for Vice-President in 1856; and after his defeat retired to private life. He died June 26, 1871.

Dongan, Thomas, Earl of Limerick; born in Castleton, Ireland, in 1634. After serving in the British and French armies he was appointed colonial governor of New York by the Duke of York in 1682. He gave the city of New York its first charter in 1686 and being accused of ignoring his pacific instructions regarding the

French and Indians, and of inciting the Five Nations to war, resigned his commission and returned to England. He died in London, Dec. 14, 1715.

Dongola, New, called by its inhabitants Orde, a town of Nubia, on the left bank of the Nile, about 750 miles S. of Cairo, with a population of about 10,000. Under Egyptian rule it became the capital of a province of the same name; the population of the province was estimated at 250,000. In the operations against the Mahdi, in 1884–1885, the town was employed by the British as a base; in March, 1886, the British forces were withdrawn, and Dongola, with all Nubia, fell into the possession of the Sudanese. OLD DONGOLA is a ruined town on the right bank of the Nile, 75 miles S. S. E. of New Dongola. It was the capital of the kingdom of Dongola, and was destroyed by the Mamelukes in 1820.

Doniphan, Alexander William, an American military officer; born in Mason Co., Ky., July 9, 1808; graduated at Augusta College and began the practice of law in 1830 in Lexington, Mo. He served in the Mexican War, in which he made a brilliant record. He was one of the Peace Commissioners at the convention which met at Washington previous to the Civil War. He died in Richmond, Mo., Aug. 8, 1887.

Donizetti, Gaetano, an Italian composer; born in Bergamo in 1798; died April 8, 1848.

Donjon, the grand central tower of a Norman or mediæval castle, frequently raised on an artificial elevation. It was the strongest portion of the building, a high square tower with walls of enormous thickness, usually detached from the surrounding buildings by an open space walled, called the Inner Bailey, and another beyond called the Outer Bailey.

Donkey Engine, a small engine used in various operations where no great power is required.

Donlevy, Harriet Farley, an American author; born in Claremont, N. H., Feb. 18, 1817; was trained for teaching. The quality of her work attracted wide attention both at home and abroad.

Donne, John, a celebrated Englis poet and clergyman; born in Londo in 1573. He studied both at Oxfor and Cambridge. In his 19th year h abjured the Catholic religion. By th desire of King James, Donne took orders, and, settling in London, wa made preacher of Lincoln's Inn. I 1621 he was appointed Dean of St Paul's. He died in March, 1631.

Donnelly, Eleanor Cecilia, a American writer of religious verse, sister of Ignatius; born in Philadelphia Sept. 6, 1838.

Donnelly, Ignatius, an America prose-writer; born in Philadelphia Nov. 3, 1831. In "The Great Cryptogram" he endeavors to prove tha Francis Bacon was the author o Shakespeare's plays. He died in Minneapolis, Minn., Jan. 2, 1901.

Donnybrook, a former village an parish, now mostly embraced in th borough of Dublin, at one time celebrated for a fair notorious for fighting

Don Quixote, the title of a famous romance by Cervantes. Th name of the hero, Don Quixote, i used as a synonym for foolish knight-errantry or extravagant generosity.

Door, a wooden or metal, or partl wood and partly metal frame, constructed so as to open and shut o hinges and close the entrance to a building, rooms, etc.

Dora d'Istra, pseudonym of ELEN GHICA; born in Bucharest Jan. 22 1829. She married the Russian Princ Kolzow-Massalsky. A voluminous Rumanian writer. She died in Florence Italy, Nov. 20, 1888.

Doran, John, an English essayis and critic; born in London, probabl in 1807; died in London, Jan. 28, 1878

Dorcas Society, the name given t an association of ladies who make o provide clothes for the needy families. The name is taken from Acts ix: 39.

Dorchester, the county town o Dorsetshire, England. In 1645, Cromwell held the town as his headquarters with 4,000 men, and in 1685 Judg Jeffreys held his "bloody assize" here when 292 received sentence of death a being implicated in Monmouth's rebellion.

Dordogne, a Department of France which includes the greater part of the ancient province of Perigord, and small portions of Limousin, Angoumois, and Saintonge. Area, 3,546 square miles. Pop. (1901) 448,545. The climate is mild but changeable.

Dore, Paul Gustave, a French draughtsman and painter; born in Strasburg, Jan. 6, 1833. He studied at Paris, contributing, when only 16 years of age, comic sketches to the ‘Journal pour Rire." He distinguished himself greatly as an illustrator of books. His illustrations of the Bible, and Milton's "Paradise Lost," are of high excellence. In later years Dore also won fame as a sculptor. He died June 23, 1883.

Doremus, Robert Ogden, an American chemist; born in New York city, Jan. 11, 1824. He graduated at New York University in 1842, and from its medical department in 1850, having established his chemical laboratory in New York in 1848. He patented noted chemical processes and fire extinguishers and was a noted expert in toxicology.

Doria, one of the most powerful families of Genoa, became distinguished about the beginning of the 12th century, and shared with three other leading families, the Fieschi, Grimaldi, and Spinola, the early government of the republic. The most famous was Andrea Doria, born in 1466, imperial admiral under Charles the Fifth. He died in 1560.

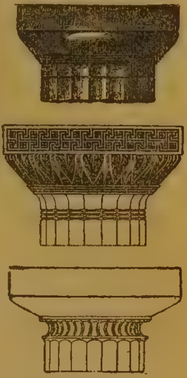
Dorians, one of the great Hellenic races who took their name from the mythical Dorus, the son of Hellen, who settled in Doris; but Herodotus says that in the time of King Deucalion they inhabited the district Phthiotis; and in the time of Dorus, the son of Hellen, the country called Histiæotis, at the foot of Ossa and Olympus. But the statement of Apollodorus is more probable, according to which they would appear to have occupied the whole country along the N. shore of the Corinthian Gulf. Indeed, Doris proper was far too small and insignificant a district to furnish a sufficient number of men for a victorious invasion of the Peloponnesus. In this remarkable achievement they were conjoined with the Heracleidæ. Doric columns were founded in Italy, Sicily, and Asia Minor.

Doric Order, in architecture, the second of the five orders, being that between the Tuscan and Ionic.

Doris, the name of a country in Greece, S. of Thessaly, from which it was separated by Mount Œta. Also a colony of the Dorians in Asia Minor, on the coast of Caria.

Dormant, in heraldry, in a sleeping posture.

Dormer Window, a window piercing a sloping roof, and having a vertical frame and gable of its own.



GRECIAN DORIC CAPITALS.
1, plain; 2, pointed; 3, at temple of Ceres in Paestum.

Dormouse, a small European mammal. The name dormouse refers to the torpid state in which it passes the severe part of the winter, hence it has even been called the Sleeper.

Dorner, Isaak August, a German Protestant theologian; born near Tuttlingen, Wurtemberg, June 20, 1809; died in Berlin, July 8, 1884.

Dornick, a species of figured linen, named from Tournay or Doornik in Flanders.

Dorpat, or **Derpt,** a town of Russia, in Livonia. The university, founded in 1632, by Gustavus Adolphus, was reëstablished by Alexander I. in 1802, and since May, 1887, has been thoroughly Russianized.

Dorr, Mrs. Julia Caroline (Ripley), an American poet; born in Charleston, S. C., Feb. 13, 1825.

Dorr, Thomas Wilson, born in Providence, R. I., Nov. 5, 1805. He was a member of the Assembly of Rhode Island in 1833–1837, and was the leader of Dorr's Rebellion. This was brought about by dissatisfaction with the voting system of the State; and a call for a constitutional convention was made by a party called the Suffrage Party, of which Dorr was the head. A constitution was made by this convention and submitted to the people in 1841, receiving a majority of the votes. A government with Dorr as president was elected. Dorr was convicted of high treason and sentenced to imprisonment for life, but was released under a general amnesty act in 1847, and was restored to his civil rights in 1851, the Rhode Island legislature ordering that his sentence should be expunged from the records of the Supreme Court. He died in Providence, Dec. 27, 1854.

DORMOUSE.

D'Orsay, Alfred Comte, a French leader of fashion; born in Paris, Sept. 4, 1801; died in Paris, Aug. 4, 1852.

Dorsey, James Owen, an American ethnologist; born in Baltimore, Md., Oct. 31, 1848. He was ordained a deacon in the Protestant Episcopal Church. He was appointed ethnologist to the United States Geological and Geographical Survey of the Rocky Mountains. He died in Washington, D. C., Feb. 4, 1895.

Dorsey, Sarah Anne, an American prose-writer; born in Natchez, Miss., Feb. 16, 1829. She was amanuensis to Jefferson Davis in the preparation of his "Rise and Fall of th Confederate Government." She die in New Orleans, La., July 4, 1879.

Dort, or **Dordrecht,** a town of th Netherlands, in the Province of Sout Holland; on an island formed by th Maas, 10 miles S. E. of Rotterda An inundation in 1421, in which u ward of 70 villages were destroye and 100,000 people drowned, separa ed the site on which Dort stands fro the mainland. It is one of the oldes as in the Middle Ages it was the ric est of the trading towns of Hollan Here, in 1572, the States of Hollan after the revolt from Spain, held thei first assembly; and the conclave o Protestant divines known as the Syno of Dort, which condemned the doctrines of Arminius as heretical, an affirmed those of Calvin, also met her Pop. (1900) 38,804.

Dortmund, a city of Prussi Province of Westphalia; on the Ems 47 miles N. N. E. of Cologne. Pop (1900) 142,418.

Dory, a popular name for a fis found at times on the North Atlanti coasts and much esteemed for eatin Also a small flat-bottomed boat use by fishermen.

Dositheans, a sect founded b Dositheus, whose life and labors wer in Samaria. The popular belief i that he was the first Christian "heretic."

Dost, Mohammed Khan, a successful usurper who obtained possession of the throne of Afghanistan after the flight of Mahmud Shah i 1818; born about 1790. He rule with great ability, and although drive from his throne by a British army was ultimately restored, and later became a steady supporter of Britis power in the East. He died in 1863.

Dostoieffsky, Feodor Mikhailovitch, a Russian novelist; born i Moscow, Nov. 11, 1821; passed throug the Imperial School of Engineers, an after a short trial of the army, adopted literature as a profession. He became involved in the Communist plot of Petrocheffsky, and was condemne to 12 years' labor in the mines, an deported to Siberia. In 1856 he was permitted to return to St. Petersburg where in 1860 he published an account of his prison life. He died in St. Petersburg, Feb. 8, 1881.

Douay Bible, the English version of the Bible translated by the students of the Roman Catholic college at Douay, under the auspices of Cardinal Allen, the founder of that seat of education. The work was published at Douay in 1609, about two years before the appearance of King James's authorized Protestant Bible. and is the only English one which has obtained the sanction of the Pope.

Double Bass, or **Base,** the largest of the stringed instruments played with a bow. Its invention is attributed to Gaspar di Salo, 1580.

Double Bassoon, the deepest-toned instrument of the bassoon family; also called contra-fagotto. It stands in the same relation to a bassoon as the double-bass does to the violoncello.

Doubleday, Abner, an American military officer; born in Ballston Spa, N. Y., June 26, 1819; graduated at the United States Military Academy. He was second in command at Fort Sumter in 1861, firing the first gun in its defense, and he greatly distinguished himself at Gettysburg. He died in Menham, N. J., Jan. 26, 1893.

Double Standard, in economics the phrase double standard is used to signify a double standard of monetary value. It implies the existence of what is known as the gold standard on the one hand, and the silver standard on the other.

Double Stars and Multiple Stars, stars which appear single to the naked eye, but in the telescope are resolved into two or more close together.

Doublet, a close-fitting garment, covering the body from the neck to a little below the waist.

Doubs, a Department of France, having Switzerland on its E. frontier. Its surface is traversed by four chains of the Jura. Pop. 302,046.

Doucet, Charles Camille, a French dramatist; born in Paris, May 16, 1812. He became in 1853 a government official in the theatrical department; was elected to the Academy in 1876, and soon after made its secretary. He died in Paris, April 1, 1895.

Douglas, a family distinguished in the annals of Scotland. Their origin is unknown. They were already territorial magnates at the time when Bruce and Baliol were competitors for the crown. As their estates lay on the borders they early became guardians of the kingdom against the encroachments of the English, and acquired in this way power, habits, and experience which frequently made them formidable to the crown.

Douglas, Amanda Minnie, an American story-writer; born in New York city, July 14, 1838; was carefully educated in English literature. She has written many stories.

Douglas, Andrew Ellicott, an American archæologist; born in West Point, N. Y., Nov. 18, 1819. He was graduated at Kenyon College in 1839. He made profound studies of Indian archæology in the United States, especially on the Florida coast.

Douglas, Sir Howard, an English naval strategist; born in Gosport in 1776; served in Canada (1795) and in two Peninsular campaigns, being present at Corunna. He was successively governor of New Brunswick, Lord High Commissioner of the Ionian Islands, and M. P. for Liverpool. He died Nov. 9, 1861.

Douglas, Stephen Arnold, an American politician; born in Brandon, Vt., April 23, 1813. In 1834 he began the practice of law at Jacksonville, Ill.; was elected attorney-general of the State in the same year, member of the Legislature in 1835, Secretary of State in 1840, and Judge of the Supreme Court in 1841. He was elected to Congress in 1843, 1844, and 1846, and to the United States Senate in 1847, 1852, and 1858. In the Lower House he advocated the annexation of Texas, and of Oregon up to 54° 40′ N. lat., and favored the war with Mexico, and in the Senate he opposed the ratification of the Clayton-Bulwer Treaty, and declared himself in favor of the acquisition of Cuba, his desire being to "make the United States an ocean-bound republic." On the question of slavery he maintained that the people of each territory should decide whether it should be a free State or a slave State; this was known as the doctrine of "popular" or "squatter sovereignty." In 1860 he received the regular Democratic nomination for the presidency, the seceding delegates nominating John C. Breckinridge. Douglas obtained 12 electoral and 1,375,157 popular votes, as against 180 electoral and 1,866,352 popular votes cast for Lincoln, to whom, in the early days of the Civil War, he gave an unfaltering support. He died June 3, 1861, in Chicago.

Douglass, Frederick, an American lecturer and journalist; the son of a negro slave; born in Tuckahoe, Md., in February, 1817. In 1832 he was purchased by a Baltimore ship-builder, but made his escape in 1838. As he had taught himself to read and write, and showed talent as an orator, he was employed by the Anti-slavery Society as one of their lecturers. In 1845 he published his autobiography and afterwards made a successful lecturing tour in England. In 1871 he was appointed secretary of the commission to Santo Domingo; in 1872, presidential elector; and in 1877 marshal for the District of Columbia. He was commissioner of deeds for that district, 1881-1886; and United States Minister to Haiti in 1890. He died in Washington, D. C., Feb. 20, 1895.

Douro, one of the largest rivers of Spain and Portugal. The total length of the river is about 490 miles; it is navigable to Torro de Moncorvo, 90 miles.

Dove, a river flowing along the borders of Derbyshire and Staffordshire, England, the favorite fishing stream of Izaak Walton, who lived here with his friend, Charles Cotton; it is still beloved of anglers.

Dove, Heinrich William, a German physicist and meteorologist; born in Liegnitz, Silesia, in 1803; studied at Breslau and Berlin, and in 1845 became Professor of Natural Philosophy at Berlin. He labored successfully in many fields of science, especially optics and electricity; but his greatest services were rendered to meteorology, which he did much to establish on a scientific basis. He was from 1848 director of the Royal Meteorological Institute, with over 80 stations. He died in Berlin, April 4, 1879.

Dover, a Cinque port and parliamentary and municipal borough in the E. of Kent, England, 66 miles E. S. E. of London. It is the headquarters of
the Southeastern District of the Bri
ish army. The fortifications compri
Dover Castle, which occupies a com
manding position on the chalk cliff
375 feet above the level of the se
Dover holds a distinguished place i
English history. Three cables conne
it with the Continent, and the no
abandoned channel tunnel was to hav
had its entrance here. Pop. (1900
est. 35,000.

Dover, a city, capital of the Stat
of Delaware, and county-seat of Ker
co.; on Jones creek, and the Philade
phia, Wilmington, and Baltimore rai
road, 75 miles S. of Philadelphia. Po
(1900) 3,329.

Dover, a city and county-seat o
Strafford co., N. H.; the oldest cit
in the State; was settled in 1623
nearly destroyed by the Indians i
1689; and was chartered as a city i
1855. Pop. (1890) 12,791; (1900
13,207.

Dover, Straits of, the narrov
channel between Dover and Calai
which separates Great Britain fron
the French coast.

Dow, or **Douw,** (properly Dou)
Gerard, a Dutch painter, the son o
a glazier; born in Leyden, April 7
1613. Died in Leyden, 1675.

Dow, Neal, an American temper
ance reformer; born in Portland, Me.
March 20, 1804. He was the autho
of the bill which prohibited the manu
facture and sale of intoxicating liquor
in the State of Maine, widely know
as the "Maine Law." During the Civi
War he was colonel of a Maine regi
ment and a Brigadier-General of vol
unteers. He died Oct. 2, 1897.

Dowd, Charles Ferdinand, a
American educator: born in Madison
Conn., April 25, 1825. He was grad
uated at Yale in 1853. He originate
the idea of longitude standards fo
railroad time, and advocated the 24
hour time notation.

Dowden, Edward, an Irish poe
and historian; born in Cork, May 3
1843. He is Professor of English Lit
erature in Trinity College, Dublin
He visited the United States in 1896
delivering a notable series of lecture
at Princeton.

Dower, the estate for life which
a widow acquires in a certain portion
of her husband's real property afte

s death. Dower, by the common w, which in this matter is the general law in the United States, entitles e widow to a third part of all the nds and tenements of which the hus- nd was seized in fee-simple, or fee- il, at any time during the coverture; it the rule varies widely on many rticulars in the different States.

Dowie, John Alexander, born in cotland. At one time a pastor in ustralia, he afterward went to Chi- go, Ill. He founded a lace-making dustry near Waukegan, Ill.; the ace was called "Zion" and his fol- wers "Zionites." He announced at he was the prophet Elijah re- rned to earth. His relations to his llowers have been widely criticized the evangelical and secular press. October, 1903, Dowie visited New ork with a large number of his fol- wers, and undertook what he called a crusade against the devil" in that y. Zion, Ill., founded by Dowie, s become a flourishing place.

Dowlas, a kind of coarse linen, ry commonly worn by the lower sses in the 16th century; also a rong calico made in imitation of the en fabric.

Downing Street, a short street in hitehall (named after Sir George owning, Secretary to the Treasury 1667), London, England, where are e Colonial and Foreign Offices, with e official residence since 1735 of the rst Lord of the Treasury. Here binet councils are held, hence the m is sometimes employed for the vernment in office.

Downs, a term given to undulating assy hills or uplands, specially ap- ed to two ranges of undulating alk hills in England, extending rough Surrey, Kent, and Hampshire, own as the North and South Downs. e word is sometimes used as equiva- t to dunes or sand-hills.

Downs, The, an important road- ad or shelter for shipping, off the E. coast of Kent, England. This ge natural harbor of refuge is 8 les by 6, with an anchorage of 4 12 fathoms. It is resorted to tem- rarily by outward and homeward und vessels and squadrons of ships war.

Doxology, a form of praise, or giv- glory to God; as in the concluding paragraph of the Lord's Prayer, "Thine is the kingdom, and the power, and the glory, for ever"; or the Hymn of the Angels (Luke ii: 14), "Glory to God in the highest, and on earth peace, good will toward men."

Doyle, Sir Arthur Conan, a British novelist; born in Edinburgh, Scotland, May 22, 1859. He was educated at the Roman Catholic college or school at Stonyhurst, Lancashire, and at the University of Edinburgh, where he graduated as Doctor of Medicine. After practising for some years, chiefly at Southsea, the success of several of his books induced him to give up the profession for that of literature. He was knighted in June, 1902.

Dozy, Reinhart, a Dutch Orientalist and historian; born in Leyden, Feb. 21, 1820. He died April 29, 1883.

Drachenfels (Dragon's Rock), a peak of the range called the Siebengebirge, on the right bank of the Rhine, 8 miles S. E. of Bonn, Prussia. It has an elevation of 1,056 feet. Its top, which commands a glorious prospect, may be gained by a mountain railway (1883).

Drachma, Drachm, or **Dram,** a silver coin, the unit of the money system in ancient Greece. The Attic drachma is estimated as equivalent to a French franc, or 19.3c in United States gold. The drachma (originally "a handful") was also the name of a weight, and 100 drachmas made a mina (nearly one pound) in weight, as in money.

Drachmann, Holger, a Danish poet, painter, and novelist; born in Copenhagen, Oct. 9, 1846. He is essentially an improvisatore; and his works show a lively fancy and excel in descriptions of the life of the common people, especially fishermen and mariners. Drachmann visited the United States in 1898.

Draco, an Athenian legislator, the extraordinary and indiscriminate severity of whose laws has rendered his name odious to humanity. During the period of his archonship, about B. C. 623, he enacted a criminal code in which slight offenses were punished as severely as murder or sacrilege. Hence it was said to be "written in blood."

Draft, a written order for the payment of a sum of money addressed to some person who holds money in trust, or who acts in the capacity of agent or servant of the drawer.

Dragoman, the general name given in Eastern countries to an interpreter, or to a guide to foreigners.

Dragon, a fabulous animal, found in the mythology of nearly all nations, generally as an enormous serpent of abnormal form. The dragons which appear in early paintings and sculptures are invariably representations of a winged crocodile. In Christian art the dragon is the usual emblem of sin. It is the form under which Satan, the personification of sin, is usually depicted.

Dragon, the lizard, genus Draco. It has the first six ribs extended in a nearly straight line, and supporting an expansion of the skin on each side which acts like a pair of parachutes. This enables these animals to take long leaps, if need be, about 30 paces from branch to branch, but there is no beating of the air, and consequently no flying, in the ordinary sense of the word. There are various species in the United States, Africa, Java, etc.

Dragonet, a genus of fishes remarkable for having the gill openings reduced to a small hole on each side of the nape, and the ventral fins placed under the throat, separate, and larger than the pectorals. The species are numerous, widely distributed in the temperate seas of the Old World, and generally finely colored.

CEMMEOUS DRAGONET.

Dragon Fly. These insects have a large, broad head, very freely attached to the thorax, and large, convex, prominent eyes, which often meet upon the crown of the head. Some 1,400 species have been described from a
parts of the world.

DRAGON FLY.

Dragonnades, or **Dragonade**
the name given to the persecutions d
rected against the Protestants chief
in the S. of France during the reig
of Louis XIV. Bands of soldier
headed by priests, marched through tl
villages giving the Protestant inhab
tants the alternative of renouncir
their faith or being given over to tl
extortions and violence of the soldier
The dragoons were conspicuous i
these expeditions, to which they ga
their name. The dragonnades dro
thousands of French Protestants ou
of France.

Dragon's Blood, in botany a win
leaved, slender-stemmed palm, simila
in habit to that which furnishes tl
chair canes. The fruits, which gro
in bunches, are about the size of
cherry, and are covered with imbrica
ing scales of a red color, coated with
resinous substance, which is collecte
by placing the fruits in a bag ar
shaking them; the friction loosens tl
resin, which is then formed into stic
or cakes, and constitutes the best dr
gon's blood of commerce. It is al
procured by incision from a tree in tl
West Indies. Dragon's blood is us
for coloring varnishes, for preparir

ld lacquers, for tooth tinctures, and
r giving a fine red color to marble.

Dragoon, a kind of mounted sol-
ier, so called originally from his
usket (dragon) having on the muz-
e of it the head of a dragon. At one
me dragoons served both as mounted
d foot soldiers, but now only as the
rmer. In the British army there
e heavy and light dragoons. The
st dragoon regiment, the Scots
reys, was formed in 1681.

Drainage, a process by which wet
d unhealthy soils are rendered ara-
e and healthy. The moisture supply
ay be artificially regulated on a large
ale; at the present time modifica-
ons of soil moisture by drainage or
rigation have a far more important
ace in farm economics than any
easures for controlling heat or light.
ils saturated with water do not re-
ond to the operations of tillage or
anuring.

Various forms of drains have been
ployed, but plain cylindrical tiles
e now generally used, and are not
ly the strongest, most accurately
justed and most effective, but the
eapest.

Drainage Tubes, in surgery, are
recent but important addition to the
rgical appliances for which this pro-
ssion is indebted to a distinguished
rench surgeon, M. Chassaignac. They
e composed of india-rubber, from
e-eighth to three-eighths inch in di-
neter, perforated with numerous
les, and of various lengths. They
e especially useful in chronic ab-
esses, but also in large wounds, such
those made by amputation, and in
cases where there is apt to be a
ep accumulation of discharge.

Drake, Alexander Wilson, an
merican artist; born near Westfield,
. J., in 1843. He became a wood
graver and later taught drawing at
oper Union. From 1870–1881 he
as head of the art department of
Scribner's Monthly" and after 1881
as director of the art department of
e "Century" publications.

Drake, Benjamin, an American
ographical writer; born in Mason
., Ky., in 1794. He established and
r many years edited the "Western
griculturist," and was the author of
number of historical works. He died
Cincinnati, O., April 1, 1841.

Drake, Sir Francis, an English navigator, born in Tavistock, in Devonshire, England, in 1539, or according to some authorities in 1545. Having gathered a number of adventurers round him he contrived to fit out a vessel in which he made two successful cruises to the West Indies in 1570 and 1571. Next year, with two small ships, he again sailed for the Spanish Main, captured the cities of Nombre de Dios and Vera Cruz, and took a rich booty which he brought safely home. In 1577 Drake make another expedition to the Spanish Main, having this time command of five ships. On this the most famous of his voyages, Drake passed the Straits of Magellan, plundered all along the coasts of Chile and Peru, sacked several ports, and captured a galleon laden with silver, gold, jewels, etc., to the value of perhaps $1,000,000.

He then ran N. as far as lat. 48° N., seeking a passage to the Atlantic, but was compelled to return to Port San Francisco on account of the cold. He then steered for the Moluccas, and holding straight across the Indian Ocean doubled the Cape of Good Hope, and arrived at Plymouth Nov. 3, 1580, being thus the first of the English circumnavigators. As there was no war between England and Spain the proceedings of Drake had a somewhat dubious character, but the queen maintained that they were lawful reprisals for the action of the Spaniards, and showed her favor to Drake by knighting him on board his own ship. Five years afterward Drake was again attacking the Spaniards in the Cape Verde Islands and in the West Indies, and in 1588 particularly distinguished himself as vice-admiral in the conflict with the Spanish Armada. In 1593 he represented Plymouth in Parliament. His later expeditions, that in 1595 against the Spanish West Indies, and that to Panama, were not so successful, and his death, on Jan. 28, 1596, at sea off Porto Bello, was hastened by disappointment.

Drake, Francis Samuel, an American historical writer; born in Northwood, N. H., Feb. 22, 1828; died in Washington, D. C., Feb. 22, 1885.

Drake, Friedrich, a German sculptor; born in Pyrmont, June 23, 1805. Drake, long Professor of Sculpture in the Academy at Berlin, died April 6, 1882.

Drake, Joseph Rodman, an American poet; born in New York, Aug. 7, 1795. The poems for which he is gratefully remembered are "The Culprit Fay" (1819), and "The American Flag" (1819). He died Sept. 21, 1820.

Drake, Samuel Adams, an American journalist and writer; born in Boston, Dec. 20, 1833. He entered journalism in 1858 as correspondent of the Louisville "Journal" and St. Louis "Republican." In 1861 he joined the army and served throughout the war, becoming Brigadier-General in 1863. He returned to Boston in 1871 and resumed literary work.

Drake, Samuel Gardner, an American antiquarian; born in Pittsfield, N. H., Oct. 11, 1798; died in Boston, Mass., June 14, 1875.

Drakenberge (Dragon Mountains), the general name given by the Dutch colonists to the range of mountains in the E. of South Africa, between Cape Colony and the Vaal river.

Drake University, a co-educational institution in Des Moines, Ia.; founded in 1891, under the auspices of the Christian Church.

Drama, a class of writings which almost entirely consist of dialogue, persons being represented as acting and speaking, and the pieces being usually intended to be acted on a stage by parties assuming the characters of the respective persons. Its two great branches are tragedy and comedy, the former, roughly speaking, melancholy in character, the latter cheerful.

Draper, Andrew Sloan, an American educator; born in Westford, N. Y., June 21, 1848; in 1894 became president of the University of Illinois.

Draper, Daniel, an American meteorologist; born in New York, April 2, 1841. After 1869 he was director of the New York Meteorological Observatory, the self-recording instruments in use there being of his design.

Draper, Henry, an American scientist, son of Prof. J. W. Draper; born in Prince Edward co., Va., March 7, 1837. He was well known for his work in the line of celestial photography.

Draper, John William, an Am
ican physiologist, chemist, and writ
born near Liverpool, England, May
1811. He came to the United Sta
in 1833; became Professor of Chen
try in the University of New York
1841, and in 1850 Professor of Phy
ology. He died in Hastings-on-t
Hudson, N. Y., Jan. 4, 1882.
wrote a number of historical works

Drave, or **Drau,** a European ri
which rises in Tyrol, flows E. S.
and after a course of nearly 400 mi
joins the Danube 14 miles E. of
sek. It is navigable for about
miles.

Dravidian, a term applied to
vernacular tongues of the great
jority of the inhabitants of South
India, and to the people themsel
who must have inhabited India pre
ous to the advent of the Aryans.

Drawing, the art of representi
on a flat surface the forms of objec
and their positions and relations
each other, was prehistoric in orig

Drawings may be divided into
classes: sketches, finished drawin
studies, academic drawings, and c
toons. First sketches are the id
put on paper by an artist, with
intention of carrying them out w
more completeness and detail in so
more elaborate work. They are me
ly intended to fix and retain his fi
thoughts. Finished drawings are su
as are carefully executed and ma
complete in all their parts. By st
ies are generally understood separ
parts of objects carefully dra
either from life or from figures in
lief; for example, heads, hands, fe
arms; but sometimes the term is
plied to drawings of entire figu
To this class also belong drawings
the skeleton and muscles, as well as
draperies, animals, trees, foregrou
or other parts of landscapes. A
demic drawings are those made in
academies from a living model in lan
light which brings out the shado
more than daylight. The position
the model is carefully arranged at
commencement of each sitting, and
that position he is required to rema
In this way the learners practise
drawing of the figure in various at
tudes. In studying drapery a
dress, a lay figure, made of wood a
with movable joints, is clothed in

rious styles, and drawings made from it. Cartoons are drawings made on stout paper of the size of the paintings to be executed from them. They are mostly employed for pictures of large size, and are regularly used by fresco painters. The design is pricked through or traced from the cartoon on the surface that receives the finished picture.

Drawing and Quartering, the punishment of treason in Great Britain in force till 1870. The law provided that the offender be drawn to the place of execution on a hurdle; that he be hanged by the neck and disemboweled; that his head be severed from his body, and that body be divided into four parts, or quartered.

Drayton, Thomas Fenwick, an American military officer; born in South Carolina about 1807. He was graduated at the United States Military Academy in 1828, and resigned from the army in 1836. He entered the Confederate army upon the outbreak of the Civil War. He played a prominent part during the attack on Port Royal, commanding a force in Fort Walker, which he was forced to evacuate. He died in Florence, S. C., Feb. 18, 1891.

Dreams, subjective phenomena dependent on natural causes, or trains of ideas which present themselves to the mind during sleep. The principal feature of the state of dreaming is the absence of voluntary control over the current of thought, so that the principle of suggestion has unlimited sway.

Drebbel, Cornelius, a Dutch philosopher; born in Alkmaar, Netherlands, in 1572. He invented the thermometer which was named for him, and is sometimes said to be the discoverer of the telescope and microscope. He died in London in 1634.

Dredging, the operation of removing mud, silt and other deposits from the bottom of harbors, canals, rivers, docks, etc., by mechanical means.

Dredging is also the operation of dragging the bottom of the sea in order to bring up oysters, or to procure shells, plants, and other objects for scientific observation. The oyster dredge is a light iron frame with a scraper like a narrow hoe on one side, and a suspending apparatus on the other. To the frame is attached a bag made of some kind of netting to receive the oysters. The dredges used by naturalists are mostly modifications of or somewhat similar to the oyster dredge. Scientific dredging has of late assumed a high importance as making us acquainted with the life of deep-sea areas.

Dred Scott Case, a notable case before the Supreme Court of the United States in 1856. A negro called Dred Scott, with his wife and two children, had been held as slaves by a Dr. Emerson in Missouri. After Dr. Emerson's death, Scott and his family claimed to be free, as having resided with their owner in a free territory. The decision was hostile to their claim, and they were held to be still slaves.

Dresden, the capital of the kingdom of Saxony; situated in a beautiful valley on both sides of the river Elbe. Among the chief edifices besides several of the churches are the museum (joined on to an older range of buildings called the Zwinger), a beautiful building containing a famous picture gallery and other treasures; the Japanese Palace (Augusteum), containing the royal library of from 300,000 to 400,000 volumes, besides a rich collection of manuscripts; the Johanneum, containing the collection of porcelain and the historical museum, a valuable collection of arms, armor, domestic utensils, etc., belonging to the Middle Ages.

The city is distinguished for its excellent educational, literary, and artistic institutions, among which are the Polytechnic School, much on the plan and scale of a university; the Conservatory and School of Music; the Academy of Fine Arts, etc. The manufactures are not unimportant, and are various in character; the china, however, for which the city is famed, is made chiefly at Meissen, 14 miles distant. The commerce is considerable, and has greatly increased since the development of the railway system. The chief glory of Dresden is the gallery of pictures, one of the finest in the world. The pictures number about 25,000, and in particular comprise many fine specimens of the Italian, Dutch, and Flemish schools. Besides this fine collection the museum contains also engravings and drawings amounting to upward of 350,000. There is here also a rich collection of casts exemplifying the progress of sculpture from the earliest times, and including copies of all the most important antiques. Dresden being thus rich in treasures of art, and favored by a beautiful natural situation, is the summer resort of many foreigners. It suffered severely in the Thirty Years' War, and also in 1813, when it was the headquarters of Napoleon's army. It was occupied by the Prussians in 1866, but was evacuated in the following spring. Pop. (1900) 395,349.

Dresden, Battle of, a battle fought in 1813 between the French under Napoleon and the allies under Schwarzenberg. Napoleon had come to the relief of the city, which was occupied by the French. The allies assaulted and bombarded the city, and soon after a great pitched battle was fought (Aug. 27), in which the allies were defeated.

Dresden China, a delicate, semitransparent, highly-finished china made at Meissen, near Dresden. They are more remarkable for excellence of execution than for purity of design.

Drew, Daniel, an American capitalist; born in Carmel, N. Y., in 1788. He was the founder of the Drew Ladies' Seminary at Carmel and the Drew Theological Seminary at Madison, N. J. He also gave large sums of money to various Methodist colleges and schools. He died in New York city, Sept. 19, 1879.

Drew, John, an American comedian; born in Dublin, Ireland, Sept. 3, 1825. He made his first appearance at the Bowery Theater, New York, in 1845, and later became manager, in connection with William Wheatley, of the Arch Street Theater in Philadelphia. He acted in the principal cities of the United States and also in England and Australia. He died in Philadelphia, Pa., May 21, 1862. His wife, Louisa Drew, born in London, England, Jan. 10, 1820, for a whole generation stood at the head of comedy actresses. Her greatest success was as Mrs. Malaprop in "The Rivals." After her husband's death Mrs. Drew managed the Arch Street Theater for a number of years. She died in Larchmont, N. Y., Aug. 31, 1897. Their son, John Drew, born in Philadelphia, Nov. 13, 1853, first appeared at his father's theater in that city, and for a short season played there with Edwin Booth. He began his starring tours in the autumn of 1892, and has since been very successful.

Drew Theological Seminary, an educational institution in Madison, N. J.; founded in 1866, under the auspices of the Methodist Episcopal Church.

Drexel, Anthony Joseph, an American banker; born in Philadelphia, Pa., in 1826. He became the head of the well-known firm of Drexel & Co., Philadelphia, having been identified with it from the age of 13. He was zealous in promoting science and art, especially music, and contributed largely to philanthropic and educational interests. The Drexel Institute of Art, Science and Industry, Philadelphia, dedicated Dec. 18, 1891, was established by him, the building costing over $600,000, with an endowment fund of $1,000,000. He died in Karlsbad, Germany, June 30, 1893.

Dreyfus, Alfred, a French military officer; born in Alsace in 1859. He entered the Polytechnic School in Paris in 1878 and four years later was made a lieutenant of artillery. In 1889 he became a captain. He was arrested in 1894 charged with selling military secrets to Germany and Italy. He was convicted and on Jan. 5, 1895, publicly degraded from his rank in the presence of 5,000 troops. His sentence included life imprisonment on the Isle du Diable, off the coast of French Guiana, where he was rigidly confined till 1899, when the French Senate voted for revision of the Dreyfus case. He was accordingly brought back to France, re-tried by court-martial and again convicted. The French government granted him a pardon almost immediately. He published "Five Years of My Life" (1901). In December, 1900, he asked the French premier to order an inquiry regarding a new charge, namely, that he (Dreyfus) had sent a letter to the Emperor of Germany, but the request was denied.

Dreyse, Johann Nikolaus von, a German inventor; born in Sommerda, near Erfurt, in Prussia, in 1787. In 1827 he invented a muzzle-loading, and in 1836 a breech-loading needle-gun, which was adopted in the Prussian army in 1840. In 1864 Dreyse was ennobled. He died Dec. 9, 1867.

Drift, a loose aggregation or accumulation of transported matter, consisting of sand and clay, with a mixture of angular and rounded fragments of rock, some of large size, having occasionally one or more of their sides flattened or smoothed, or even highly polished. The smoothed surfaces usually exhibit many scratches parallel to each other, one set often crossing an older one.

Drift Period, the period during which the drift described above was deposited. Though there is no reason why it should not have recurred time after time during bygone geological ages, and perhaps it may be ultimately proved conclusively that it has done so, yet the term "drift-period" as a measure of duration is limited to the time commencing during the Newer Pliocene or Pleistocene, and terminating with the Post Pliocene or Post Pleistocene, during which drift was deposited in the latitudes in which we find it now. The drift is now universally attributed, as Agassiz long ago suggested, to the action of ice, the only controversy remaining being whether land ice or floating icebergs took the chief part in its distribution.

Drill, a metallic tool for boring a hole in metal or hard material such as stone. Its form varies with the material in which it works.

Drip Stone, a corona or projecting tablet or molding over the heads of doorways, windows, archways, niches, etc.

Dromedary, a swift variety of the one-humped camel, bearing the same relation to it as race horse to cart horse. Its usual pace is a trot, which, with terrible joltings to the rider, can be maintained often at the rate of nine miles an hour for many hours on a stretch. Many varieties for racing are reared, and white forms are much prized in some parts of the East.

Dropsy, a preternatural collection of serous or watery fluid in the cellular tissue, or different cavities of the body. It receives different appellations, according to the particular situation of the fluid.

Dropsy is not a disease in itself. It is a result, a symptom, and it is equally evident that it may be a consequence of a great variety of circumstances.

One of the commonest forms of dropsy is obstruction to the circulation in the veins; and in such cases the dropsy occurs usually chiefly in the most dependent parts, about the feet and ankles. Pressure of tumors upon veins is a frequent cause. But nothing produces dropsy in this way so quickly as some disorder of the heart impeding the due flow of blood through it. In such a case the dropsy begins in the feet and ankles, and creeps upward slowly or rapidly according to the extent of the failure of the heart.

DROMEDARY.

Drosky, Droshky, or **Droschky,** a Russian and Prussian four-wheeled vehicle in which the passengers ride astride a bench, their feet resting on bars near the ground. It has no top.

Drouet, Jeane Baptist, Comte d'Erlon, a French marshal; born in Rheims July 29, 1765. On the return of Napoleon from Elba he contrived to seize the citadel of Lille, in which he had been imprisoned, and held it for the emperor, who made him a peer of France. At the battle of Waterloo he commanded the 1st corps d'armee. After the capitulation of Paris he fled to Bavaria, where he resided till the July Revolution, when he returned to France, and received in 1832 the command of the army of Vendee. During

1834–1835 he held the office of governor-general of Algeria, and in 1843 was elevated to the rank of marshal. He died Jan. 25, 1844.

Drouyn de Lhuys, Edouard, a French statesman; born in Paris, Nov. 19, 1805. Under Louis Napoleon's presidency he became Minister of Foreign Affairs, and in 1849 went to London for a short time as ambassador; after the coup d'etat he became one of the vice-presidents of the Imperial Senate, and again Minister of Foreign Affairs. Being disappointed at the issue of the Vienna Conferences in 1855, he resigned his office. In 1863 he was recalled to his old post, resigning again in 1866. He died March 1, 1881.

Drown, Thomas Messinger, an American scientist; born in Philadelphia, March 19, 1842. He was graduated at the University of Pennsylvania in 1862, studying later at Yale, Harvard, and Heidelberg. From 1874 to 1881 he was Professor of Chemistry at Lafayette College, and from 1885 to 1895 at the Massachusetts Institute of Technology. After 1895 he was president of Lehigh University.

Drowning, death by suffocation, owing to the mouth and nostrils being immersed in a liquid. Complete insensibility arises in from one to two minutes after submersion, recovery being still possible; death occurs in from two to five minutes. As long as the heart continues to beat, recovery is possible; after it has ceased, it is impossible. Newly-born children and young puppies stand submersion longer than the more fully grown. Various methods have been devised for the restoration of the apparently drowned. That of Dr. Sylvester, recommended by the English Humane Society, produces deeper inspiration than any other known method. That known as the "direct method," introduced by Dr. Benjamin Howard, of New York, effects the most complete expiration. These two methods combined and therefore tending to produce the most rapid oxygenation of the blood, the real object to be gained, form the basis for the instructions given out primarily for the use of life-saving crews and distributed also in convenient form among ship captains and mariners. They are here reproduced.

Rule 1. Arouse the Patient.— Do not move the patient unless in danger of freezing; instantly expose the face to the air, toward the wind if there be any; wipe dry the mouth and nostrils; rip the clothing so as to expose the chest and waist; give two or three quick, smarting slaps on the chest with the open hand.

If the patient does not revive proceed immediately as follows:

Rule 2. To Expel Water from the Stomach and Chest.— Separate the jaws and keep them apart by placing between the teeth a cork or small bit of wood; turn the patient on his face, a large bundle of tightly rolled clothing being placed beneath the stomach; press heavily on the back over it for half a minute, or as long as fluids flow freely from the mouth.

Rule 3. To Produce Breathing.— Clear the mouth and throat of mucus by introducing into the throat the corner of a handkerchief wrapped closely around the forefinger; turn the patient on the back, the roll of clothing being so placed as to raise the pit of the stomach above the level of the rest of the body. Let an assistant with a handkerchief or piece of dry cloth draw the tip of the tongue out of one corner of the mouth (which prevents the tongue from falling back and choking the entrance to the windpipe), and keep it projecting a little beyond the lips. Let another assistant grasp the arms just below the elbows and draw them steadily upward by the sides of the patient's head to the ground, the hands nearly meeting (which enlarges the capacity of the chest and induces inspiration). While this is being done let a third assistant take position astride the patient's hips with his elbows resting on his own knees, his hands extended ready for action. Next, let the assistant standing at the head turn down the patient's arms to the sides of the body, the assistant holding the tongue changing hands if necessary (changing hands will be found unnecessary after some practice; the tongue, however, must not be released), to let the arms pass. Just before the patient's hands reach the ground the man astride the body will grasp the body with his hands, the balls of the thumb resting on either side of the pit of the stomach, the fingers falling into the grooves between the short ribs.

Now, using his knees as a pivot, he will at the moment the patient's hands touch the ground throw (not too suddenly) all his weight forward on his hands, and at the same time squeeze the waist between them as if he wished to force anything in the chest upward out of the mouth; he will deepen the pressure while he slowly counts one, two, three, four (about five seconds), then suddenly let go with a final push, which will spring him back to his first position. (A child or very delicate patient must, of course, be more gently handled.) This completes expiration.

At the instant of his letting go, the man at the patient's head will again draw the arms steadily upward to the sides of the patient's head as before (the assistant holding the tongue again changing hands to let the arms pass if necessary), holding them there while he slowly counts, one, two, three, four (about five seconds).

Repeat these movements deliberately and perseveringly 12 to 15 times in every minute — thus imitating the natural motions of breathing.

If natural breathing be not restored after a trial of the bellows movement for the space of about four minutes then turn the patient a second time on the stomach, as directed in Rule 2, rolling the body in the opposite direction from that in which it was first turned, for the purpose of freeing the air passage from any remaining water. Continue the artificial respiration from one to four hours, or till the patient breathes, according to Rule 3; and for a while, after the appearance of returning life, carefully aid the first short gasps, till deepened into full breaths. Continue the drying and rubbing, which should have been unceasingly practised from the beginning by assistants, taking care not to interfere with the means employed to produce breathing. Thus the limbs of the patient should be rubbed, always in an upward direction toward the body, with form-grasping pressure and energy, using the bare hands, dry flannels, or handkerchiefs, and continuing the friction under the blankets or over the dry clothing. The warmth of the body can also be prompted by the application of hot flannels to the stomach and armpits, bottles or bladders of hot water, heated bricks, etc., to the limbs and soles of the feet.

Rule 4. After-Treatment.— Externally: As soon as breathing is established, let the patient be stripped of all wet clothing, wrapped in blankets only, put to bed comfortably warm, but with a free circulation of fresh air, and left to perfect rest. Internally: Give whiskey or brandy and hot water in doses of a teaspoonful to a tablespoonful, according to the weight of the patient, or other stimulant at hand, every 10 or 15 minutes for the first hour, and as often thereafter as may seem expedient. Later manifestations: After reaction is fully established there is great danger of congestion of the lungs, and if perfect rest is not maintained for at least 48 hours, it sometimes occurs that the patient is seized with great difficulty of breathing, and death is liable to follow unless immediate relief is afforded. In such cases apply a large mustard plaster over the breast. If the patient gasps for breath before the mustard takes effect assist the breathing by carefully repeating the artificial respiration.

Modification of Rule 3.— To be used after Rules 1 and 2 in case no assistance is at hand.

To Produce Respiration.— If no assistance is at hand and one person must work alone, place the patient on his back with the shoulders slightly raised on a folded article of clothing; draw forward the tongue and keep it projecting just beyond the lips; if the lower jaw be lifted the teeth may be made to hold the tongue in place; it may be necessary to retain the tongue by passing a handkerchief under the chin and tying it over the head.

Grasp the arms just below the elbows and draw them steadily upward by the sides of the patient's head to the ground, the hands nearly meeting.

Next lower the arms to the side and press firmly downward and inward on the sides and front of the chest over the lower ribs, drawing toward the patient's head.

Repeat these movements 12 to 15 times every minute, etc.

Drowning was formerly a mode of capital punishment in Europe and Rome. The "Lex Cornelia" decreed that a parricide should be sewn up in a sack with a dog, cock, viper, and ape, and thrown into the sea. Anglo-Saxon codes ordered women convicted of theft to be drowned. In Scotland, in 1623, 11 gypsy women were sentenced to be drowned in the Nor' Loch. In France, drowning was employed as late as 1793. To smother faithless wives in mud was a punishment in the Middle Ages. In Ireland there was an execution by drowning in 1777.

J. Ackerman Coles, M. D.

Droz, Gustave, a French storyteller; born in Paris, June 6, 1832. He was trained for a painter, but in 1864 gave up the pencil for the pen. He excelled in little sketches of life and manners, and his lively, playful descriptions of bachelorhood and married life captivate the public. He died Oct. 22, 1895.

Drug, a name applied to all articles used for medicinal purposes, though the term should, perhaps, be strictly confined to what are called simples, balsams, gums, resins, and exotic products used as medicaments in a dry state.

Drugget, a coarse and flimsy woolen texture, chiefly used for covering carpets.

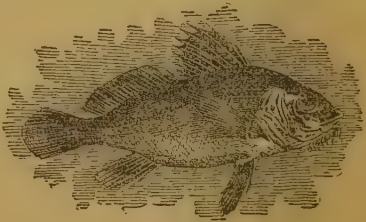
Druids, the priests of the Celts of Gaul and Britain. According to Julius Cæsar, they possessed the greatest authority among the Celtic nations. They had some knowledge of geometry, natural philosophy, etc., superintended the affairs of religion and morality, and performed the office of judges. They had a common superior, who was elected by a majority of votes from their own number, and who enjoyed his dignity for life. They took unusual care to fence themselves round with mysteries, and it is probable that they cherished doctrines unknown to the common people; but that they had a great secret philosophy which was handed down by oral tradition is very unlikely. Of their religious doctrines little is known. Human sacrifice was one of their characteristic rites, the victims being usually prisoners of war.

Druids, United Ancient Order of, a secret society springing from a club organized in London, England, in 1871, solely for the entertainments of its members. A "grove" was instituted in New York in 1833, and was the parent of the order in the United States. The order rapidly extended through the country, and from the past officers a supreme body was organized under the title of the "Grand Grove of the United States of the United Ancient Order of the Druids," which declared its independence of the English supreme grove, made an entire change in the ritual, and introduced a number of new degrees.

Druid Stones, a name given in the S. of England and other parts of the country to those weather-worn, rough pillars of gray sandstone which are scattered over the surface of the chalk-downs in England, in Scotland, and its islands, and which exist in great numbers in other countries; generally in the form of circles, or in detached pillars; it is not certain, however, that the Druids had any connection with these stones.

Drum, a musical instrument formed by stretching parchment over the heads of a cylinder of wood or over a bowl-shaped metallic vessel.

Drumfish, or **Drum,** and other species of the same genus, fishes found on the Atlantic coasts of North America, and so named from the deep drumming sound they make in the water.



DRUMFISH.

Drumgoole, John C., an American clergyman; born in Longford co., Ireland, in 1828. He was ordained a Roman Catholic priest in the United States, and in 1871 began an organized mission in New York city for homeless boys. The work grew under his charge and he built in New York city a home called the "Mission of the Immaculate Virgin," and established an industrial farm of over 600 acres on Long Island, all in the interest of homeless boys. He died in New York city, March 28, 1888.

Drummond, Sir George Gordon, an English soldier; born in 1771. He entered the British army as ensign in 1789; became lieutenant-colonel 1794; served with distinction in the Holland campaign, 1794–1795, and in Egypt, 1800; was staff-officer at Jamaica several years; on duty in Canada, 1808–1811; promoted lieutenant-general, 1811; again ordered to Canada as second in command under Sir George Prevost, 1813; planned and effected the capture of Fort Niagara, and planned the successful attack on Black Rock and Buffalo; led a combined military and naval force against Oswego and destroyed the American works and stores, May, 1814; was in command of the British forces at the battle of Lundy's Lane, July 25, and in August invested, but failed to capture, Fort Erie. In 1815 he was appointed Governor-General of Canada, resigned and returned to England, and in 1817 received the grand cross of the Order of the Bath. He died in 1854.

Drummond, Henry, a Scotch geologist and religious writer; born in Stirling in 1851. He studied theology at Edinburgh University, but did not adopt the clerical profession. In 1877 he was appointed Professor of Natural Science in the Free Church College, Glasgow. "Natural Law in the Spiritual World" (1883), and its successor, "The Ascent of Man," applications of modern scientific methods to the immaterial universe, made his popular fame. He traveled in Central Africa (1883–1884) studying its botany and geology, and later wrote "Tropical Africa" (1888). Other semi-religious writings of his are: "Pax Vobiscum" (1890); "The Greatest Thing in the World" (1890); "The Programme of Christianity" (1892). He died in Tunbridge Wells, England, March 11, 1897.

Drummond, Thomas, inventor of the Drummond Light, was born in Edinburgh, Scotland, in 1797, and died in Dublin, Ireland, April 15, 1840.

Drummond Light, a light invened by Thomas Drummond, about 1826, to supply a deficiency which was found to exist in the means of making distant stations visible from each other. It is made by exposing a small ball of quicklime to the action of the oxy-hydrogen blow-pipe, or the lime may be placed in the flame of a spirit-lamp fed by a jet of pure oxygen gas. Drummond's apparatus was so constructed that the lamp fed itself automatically with spirit and with oxygen, supplying itself with balls of lime as they were gradually consumed, and was provided with a parabolic silvered mirror. With this apparatus the light produced by a ball of lime not larger than a boy's marble was visible at a distance of nearly 70 miles, in a direct line.

Drury College, a co-educational institution in Springfield, Mo.; founded in 1873, under the auspices of the Congregational Church.

Drury's Bluff, an eminence on the James river, near Fort Darling, 8 miles S. of Richmond, Va. It was the scene of a battle, May 16, 1864, in which the Confederates under Beauregard defeated the Union troops under Butler, with a loss to the Confederates of 2,500 and to the Union army of 3,012.

Druse, Druze, Deruz, or **Dorouz,** a politico-religious sect of Mohammedan origin, but deemed by orthodox Moslems heretical. El-Hakim Biami-Allah, the sixth Fatimite Caliph of Egypt, a cruel and fanatical man, who lived in the 11th century, proclaimed himself an incarnation of God, and established a secret society. When walking in the vicinity of Cairo, his capital, he disappeared from his subjects' view, the most natural explanation being that he was assassinated and his body hidden somewhere. His followers believed in his return to this earth to reign over it, and propagated their faith in the adjacent lands. Two of the most notable missionaries were the Persian messengers, Hamzah and Mohammed ben Ismail ed Derazi. The latter proclaimed the Druse tenets with such zeal in Lebanon that the converts to belief in El-Hakim were called not Hakimites but Druses. The Druses believe in the unity of God, who they think was manifest in the person of several individuals, the last of them Hakim. Their day of worship is Thursday. Ethnologically they are Arabs who came from the E. parts of Syria and settled in Lebanon and Antilebanon in the 11th century. Their territory on the Lebanon is S. of the Maronites. They extend thence to the Hauran and to Damascus. In

1860 they attacked the Maronites, about 12,000 of whom they cruelly massacred, not sparing even women or male children in their fury. This outburst was fast passing into a general rise of the Mohammedans on the Christians of Syria, when the arrival of Turkish and French troops, in August and September, 1860, and the execution of 167 Druses, more deeply criminal than others, restored at least the semblance of tranquillity. No similar outbreak has since occurred.

Drusilla, a daughter of Herod Agrippa I., King of the Jews. She was born A. D. 38; married Azizus, King of Emesa, whom she divorced in order to marry Felix, procurator of Judea. She is thus the Drusilla who is mentioned in the Acts, and was probably present when Paul preached before Felix.

Drusus, the name of several distinguished Romans, among whom were: Marcus Livius, orator and politician; became tribune of the people in 122 B. C. Marcus Livius, son of the above. He rose to be tribune of the people, and was assassinated B. C. 91. Nero Claudius, brother of the Emperor Tiberius, born B. C. 38. By a series of brilliant campaigns he extended the Roman empire to the German Ocean and the river Elbe, and was hence called Germanicus. By his wife Antonia, daughter of Mark Antony, he had a daughter, Livia, and two sons, Germanicus and Claudius, the latter of whom afterward became emperor. He died in 9 B. C.

Dryad, a nymph of the woods; a deity supposed to preside over the woods; a wood-nymph. They differ from hamadryads in that the latter were attached to particular trees, with which they were born and died.

Dryden, John, an English poet; descended from an ancient family, his grandfather being Sir Erasmus Dryden of Canons Ashby, Northamptonshire; he was born near Aldwinkle, Northamptonshire, in 1631; he went to Trinity College, Cambridge, being here elected to a scholarship. After leaving the university he went to London, where he acted as secretary to his cousin, Sir Gilbert Pickering, a favorite of Cromwell; and on the death of the Protector he wrote his historic stanzas on that event. At the Restoration, however, he hailed the return of Charles II. in "Astræa Redux," and from that time his devotion to the Stuarts knew no decay. Dryden is unequalled as a satirist among English poets, and the best of his tragedies are unsurpassed by any since written. His poetry as a whole is more remarkable for vigor and energy than beauty, but he did much to improve English verse. He was also an admirable prose writer. He died May 1, 1700, and was buried in Westminster Abbey.

Dry Rot, a name given to a decay in timber caused by the mycelium of several species of fungus, which under certain conditions of heat and moisture attack woodwork in ships, houses, and wooden erections in general, growing in the dark, and rapidly increasing in bulk, first covering the surface with a series of thread-like filaments, which are continually being added to, and ultimately forming a thick, leathery, white substance, such as is often found behind the partitions of walls and under floors. It penetrates the wood in all directions, reducing it to powdery rottenness, in many cases doing irreparable mischief before it is observed.

Dual, in grammar, that number which is used, in some languages, to designate two things, while another number (the plural) exists to express many.

Dualism, the philosophical exposition of the nature of things by the hypothesis of two dissimilar primitive principles not derived from each other. Dualism in religion is chiefly confined to the adoption of a belief in two fundamental beings, a good and an evil one, as is done in some Oriental religions, especially that of Zoroaster. In metaphysics, dualism is the doctrine of those who maintain the existence of spirit and matter as distinct substances, in opposition to idealism, which maintains we have no knowledge or assurance of the existence of anything but our own ideas or sensations.

Dual Personality, the supposed distinction, and potentially independent action, of each of the cerebral hemispheres; from one of which, the left, arises all the good and ennobling aims of life, while from the other come all the malevolent influences.

Dubarry, Marie Jeanne, Comtesse, mistress of Louis XV.; born in Vaucouleurs, Aug. 19, 1746; went to Paris in youth; exercised a powerful influence at court, and with some of her confidants completely ruled the king. After the death of Louis she was dismissed from court and sent to live in a convent near Meaux. She received a pension from Louis XVI. During the reign of terror she was arrested as a royalist and executed Dec. 7, 1793.

Dublin, the metropolis of Ireland, is situated in County Dublin, within a mile of Dublin bay, into which the Liffey river runs after dividing the city, through which its course is nearly from W. to E., into equal parts. The bay is neither commodious nor safe, particularly in winter. Its defects are remedied, however, by the harbor inclosed within the N. and S. walls, the latter of which is a magnificent wall of stone running out into the sea for 3½ miles from the S. bank of the Liffey, and terminated by a lighthouse. There is also a harbor of refuge at Kingston.

The most important literary and scientific institutions are Trinity College; the Royal University of Ireland; the Roman Catholic University College; Wesley College; the Royal Dublin Society; the Royal Hibernian Academy of Painting, Sculpture, and Architecture; the Royal Irish Academy; the Archæological Society; the Royal Zoölogical Society, etc. The principal libraries, besides that of Trinity College, are the National Library, Marsh's Library, containing about 18,000 volumes; and that of the Royal Dublin Society.

Dublin contains two Protestant Episcopal cathedrals — St. Patrick's and Christ Church. St. Patrick's Cathedral is an antique building, erected in 1190, decorated with a steeple in 1370, and a very lofty spire in 1750. Christ Church, built in 1038, the ancient cathedral of Dublin, is another venerable pile. St. George's Church is a superb edifice, with a magnificent front and lofty spire. The charitable institutions are numerous, and some of them possess splendid buildings.

A little N. W. of the city, up the Liffey, is Phœnix Park, one of the most extensive and beautiful public parks of which any European city can boast. Its area is 1,759 acres; it is adorned with trees, and its surface picturesquely broken into heights and hollows. In the Phœnix Park are the vice-regal lodge, the residence of the lord-lieutenant, with gardens and grounds occupying 160 acres; the chief secretary's and under-secretary's official residences; the Royal Hibernian Military School and the depot of the Royal Irish Constabulary; as also the gardens of the Royal Zoölogical Society. In this park is an obelisk over 200 feet in height, erected in honor of the Duke of Wellington. There are a number of other parks.

The manufactures carried on in Dublin are of little note. The poplins, a fabric of silken warp and woolen weft, for which Dublin has been long celebrated, are still in some request, and brewing and distilling are largely carried on. The trade is important, the shipping entered and clearing having each a tonnage of about 2,300,000 annually. Dublin sends four members to Parliament. Pop. (1891) 245,001; (1901, as extended in 1900) 289,108.

Dubois, Augustus Jay, an American engineer; born in Newton Falls, O., April 25, 1849. He was graduated at Sheffield Scientific School in 1869, and since 1884 has been Professor of Civil Engineering at that institution.

Du Camp Maxime, a French writer; born in Paris, Feb. 8, 1822. He died in Baden-Baden, Feb. 8, 1894.

Du Cange, Charles Dufresne, Sieur, a celebrated French scholar, lexicographer, and historian; born in Amiens, Dec. 18, 1610. He died in Paris, Oct. 23, 1688.

Ducange, Victor Henri Joseph Brahain, a French poet and story-teller; born in the Hague, Nov. 24, 1783. His first stories, "Agatha," and "Valentine," were received with great favor; but for his too realistic description in "Valentine" of the excesses of the royalist bands, he was sent to jail for six months. Released, he was again imprisoned, ostensibly for vilifying the French Academy. His novels are vividly dramatic and descriptive, but he loves the horrible too well. He died in Paris, Oct. 23, 1833.

Ducat, the name of a coin current in several countries. It is no longer the monetary unit in any country. It was formerly a favorite coin with the Dutch, and, owing to the excellence of the pieces struck, they were sought for and imitated by several other countries, and especially Russia. Ducats now everywhere circulate at a valuation, where they circulate at all, or are bought and sold simply as bullion.

Ducey, Thomas James, an American clergyman; born in Lismore, Ireland, Feb. 4, 1843. He came to the United States when five years old. After his graduation at the Theological Seminary in Troy, N. Y., he was ordained a Roman Catholic priest in 1868. He founded St. Leo's Church in New York city in 1880 and has been its pastor ever since. In 1891 the Pope conferred on him the title of Monsignor. He has been an active champion of labor and reform.

Du Chaillu, Paul Belloni, a French-American explorer and writer; born in Paris, July 31, 1835. His travels in Africa, in which he discovered the gorilla and the pigmies, are detailed in "A Journey to Ashango Land" (1867), and "My Apingi Kingdom" (1870). "The Land of the Midnight Sun" (1881) deals with Norway. "The Viking Age" (1887), is a more ambitious work, intended to recreate the old Norse civilization. He also wrote many books for the young. He died May 1, 1903.

Duchesne, Andre, a French historian; born in Touraine in 1584. History and geography were his favorite studies from his youth, and under Richelieu's ministry he was appointed royal geographer and historiographer. His most important works are the histories of England, Scotland, and Ireland, of the Popes down to Paul V., and of the House of Burgundy, and his collections of the early Norman and French histories. His industry was extraordinary; he is said to have left more than 100 folios in manuscript. He died in 1640.

Duchobortzi (Warriors of the Spirit), a sect of Russian mystics, traceable to the middle of the 18th century, who depend on an inward light, like the Quakers, attach little importance to the sacraments, priesthood, and services of the Church, refuse military service, and reject the doctrine of the Trinity and the divinity of Christ. The Emperor Alexander I. allowed them to settle in Taurida, in South Russia; Nicholas I., in 1841, transferred them to Transcaucasia. In 1899 a considerable colony of these people was settled in Canada through the influence of Count Tolstoi. In the winter of 1902–3 the colony of these people in Canada were seized with a religious mania which led them to abandon their homes and their cattle, and would have resulted in their destruction but for the strenuous interference of the authorities.

Duck. The ducks proper are distinguished from the swans comprised in the same family, by having shorter necks; and from the geese, also of the same family, by having shorter necks, and legs less strong and placed farther back. They also subsist largely on insects and other animal food, while the geese and swans live mostly on vegetable food. Among the ducks we may mention mallard, or common wild duck, which is found both in Europe and America. This is the original stock of the domesticated duck, and appears to have been reclaimed at a very early period. It is found in nearly every fresh-water lake and river in the greater part of the United States and in the West Indies. The flesh of the wild duck is held in general estimation, and various methods are resorted to in order to obtain these birds in quantities.

The musk duck, erroneously called muscovy duck, is the largest of the duck kind, and approaches nearly to the size of a goose. It has obtained its name from a strong smell of musk which exhales from its body, and not because it comes from Russia, as has been supposed, since it is a native of South America. The musk ducks are tamed in great quantities in the West Indies, and are found wild in Guiana, where they nestle on the trunks of trees, close to the water's edge. They feed much on a plant called wild rice, and are difficult to approach.

The canvasback duck is peculiar to the United States, and was known to the epicure long before it was described by the naturalist. The canvasback ducks arrive in the United States from the N. about the middle of October, and principally assemble in the numerous rivers in the neighborhood of Chesapeake bay. On the Susquehanna they are called canvasbacks, on the Potomac whitebacks, and on the James sheldrakes. The canvasback is constantly attended by another species, the American widgeon which manages to make a good subsistence from his labors. This bird is extremely fond of the tender roots of that particular species of plant on which the canvasback feeds. The widgeon which never dives, watches the moment the canvasback rises, and before he has his eyes well opened, snatches the morsal from his mouth, and makes off.

Among other species of ducks are the shoveler, remarkable for the strange form of its bill; the gadwall, which is more rare in America than in Europe; pintail or sprigtail, remarkable for the form of its tail, abundant in both hemispheres; black or dusky duck, peculiar to America, and very abundant, is perhaps the most sagacious and timid of all the American ducks; summer or wood duck, not more remarkable for its great beauty in which it stands preëminent, than for its habits, its migrations being directly opposed to those of the other species; teal, eider-duck; velvet duck, found in both hemispheres; its flavor is rank and fishy, and it is therefore seldom sought after; scoter, found both in Europe and America; pochard or redhead; common to both continents; it approaches very near to the canvasback in delicacy; its usual weight is about 1¾ pounds; scaup-duck or bluebill, a well known and common species in both continents; long tailed duck, or old wife; common to both continents, remarkable for the long and slender middle feathers of its tail; and the harlequin duck; a magnificent species found on both continents; it derives its name from the singularity of its markings; along the coast of New England it is called the lord.

Duck, a species of coarse cloth made of flax, lighter and finer than canvas.

Duckbill, also called the duck-mole, water-mole, or duck-billed platypus, a genus of mammals peculiar to Australia and the neighboring islands. It is of all animals which suckle their young the most like a bird. It has a rather flat body of about 18 inches in length, and the head and snout greatly resemble those of a duck, whence the popular name; the feet are webbed and flat, tail short, broad, and flat.

Ducking Stool, a chair in which scolding and vixenish wives were formerly securely fastened, to receive the punishment of being ducked in water. The woman was placed in the chair with her arms drawn backward; a bar was placed across her back and inside her elbows, while another bar held her upright; in this uncomfortable position she was securely tied with cords. The persons appointed to carry out the punishment, by raising their end of the beam, caused the unfortunate culprit to go overhead into the water. By pulling down their end with a chain, she was once more brought to the surface.

DUCKING STOOL.

Duckweed, the popular name of several plants growing in ditches and shallow water, floating on the surface and serving for food for ducks and geese.

Duclerc, Charles Theodore Eugene, a French statesman; born in Bagneres-de-Bigorre, France, Nov. 9, 1812. He was elected vice-president of the National Assembly in 1875; chosen a senator for life in the same year; and became premier in 1882. He died in July, 1888.

Ducornet, Louis Cesar Joseph, a French artist; born in Lille Jan. 10, 1806. Born without arms, he learned in early childhood to use his feet for hands, and when 13 years old showed such skill in drawing with his toes that Watteau received him as a pupil in the Lille Academy of Design. At the end of three years he took the first prize for a drawing of the human figure from life, and received a pension from the city which the government subsequently increased. He then went to Paris for more advanced study, painted "The Parting of Hector and Andromache," (1828), and presented it to his native city. He continued painting till within a few weeks of his death. His last work of note, "Edith Finding the Body of Harold," was ordered by Napoleon III. and exhibited in 1855. He died in Paris, April 27, 1856.

Ductility, the quality of adaptedness for drawing into wire. The order of metals in these two respects is as follows: ductility — gold, silver, platinum, iron, copper, zinc, tin, lead, and nickel; malleability — gold, silver, copper, tin, platinum, lead, zinc, iron and nickel. The less ductile soft metals, such as magnesium, which cannot be drawn, are converted into wire by the process of pressing or squirting.

Dudley, Thomas Underwood, an American clergyman; born in Richmond, Va., Sept. 26, 1837. He was graduated at the University of Virginia in 1858, and served in the Confederate Army during the Civil War, attaining the rank of major. Completing his studies at the Virginia Theological Seminary was made assistant Bishop of Kentucky in 1875, and Bishop in 1884.

Dudley, William Lofland, an American scientist; born in Covington, Ky., April 16, 1859. He was graduated at the University of Cincinnati in 1880. His iridium process for electroplating is very successful. Since 1886 he has been Professor of Chemistry at Vanderbilt University, being also dean of the Medical Department. He was Director of Affairs of the Tennessee Centennial Exposition in 1897.

Dudley, William Russel, an American botanist; born in Guilford, Conn., March 1, 1849. He was graduated at Cornell in 1874, becoming Assistant Professor of Botany there in 1876. Since 1892 he has been Professor of Botany at Leland Stanford, Jr., University.

Duel, a premeditated and prearranged combat between two persons with deadly weapons, for the purpose of deciding some private difference or quarrel. The combat generally takes place in the presence of witnesses called seconds, who make arrangements as to the mode of fighting, place the weapons in the hands of the combatants, and see that the laws they have laid down are carried out. The origin of the practice of duelling is referred to the trial by "wager of battle" which obtained in early ages. This form of duel arose among the Germanic peoples, and a judicial combat of the kind was authorized by Gundebald, King of the Burgundians, as early as 501 A. D. When the judicial combat declined the modern duel arose, being probably to some extent an independent outcome of the spirit and institutions of chivalry. France was the country in which it arose, the 16th century being the time at which it first became common. In 1602, Henry IV. issued a decree against it, and declared it to be punishable with death. Many subsequent prohibitions were issued, but they were all powerless to stop the practice. During the minority of Louis XIV. more than 4.000 nobles are said to have lost their lives in duels.

The practice of duelling was introduced into England from France in the reign of James I.; but it was never so common as in the latter country. Cromwell was an enemy of the duel, but as society became more polished duels became more frequent, and they were never more numerous than in the reign of George III.

By English law fatal duelling is considered murder, no matter how fair the combat may have been, and the seconds are liable to the same penalty as the principals. In 1813 the principal and seconds in a fatal duel were sentenced to death, though afterward pardoned. An officer in the army having anything to do with a duel renders himself liable to be cashiered. In France duelling still prevails to a certain extent; but the combats are usually very bloodless and ridiculous affairs. In the German army it is common, and is recognized by law. The duels of German students, so often spoken of, seldom cause serious bloodshed.

Some recent German duels have been cowardly murders, and the German emperor has been blamed for leniency to duellists.

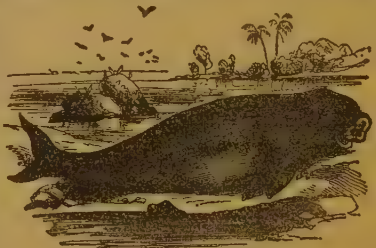
In the United States duels are now uncommon, and nearly everywhere prohibited by State laws. In some of the States the killing of a man in a duel is punishable by death or by forfeiture of political rights, and in a large number the sending of a challenge is a felony. In the army and navy it is forbidden. During the Revolution there were a number of duels. Charles Lee was wounded by John Laurens; Gwinnett, a signer of the Declaration, was killed by General McIntosh; Alexander Hamilton was slain by Aaron Burr. Decatur was killed and Barron wounded fighting a duel. Andrew Jackson killed Dickinson, and fought several other duels. Colonel Benton killed Lucas, and had other encounters. Henry Clay and John Randolph fought in 1826. De Witt Clinton was a duellist.

Dufferin, Frederick Temple Hamilton-Blackwood, Marquis of, a British statesman and author, son of the 4th Baron Dufferin; born in Florence in 1826. He began his public services in 1855, when he was attached to Earl Russell's mission to Vienna. Subsequently he was sent as commissioner to Syria in connection with the massacre of the Christians (1860); was under Indian secretary (1864–1866); under secretary for war (1866); chancellor of the Duchy of Lancaster (1868–1872); Governor-general of Canada (1872–1878); ambassador at St. Petersburg (1879–1881); and at Constantinople (1882); sent to Cairo to settle the affairs of the country after Arabi Pasha's rebellion (1882–1883); Viceroy of India (1884–1888); British ambassador to Italy (1889), to France (1891). Died Feb. 12, 1902.

Duffy, Sir Charles Gavan, an Irish patriot; born in County Monaghan in 1816. He had an active share in promoting the Tenant League and the Independent Irish party, and on the break up of the latter, emigrated to Australia in 1856. After some time of practice at the Melburne bar, he drifted into politics, and after the establishment of the Victorian constitution, rose in 1857 to be Minister of Public Works, of Lands in 1858 and 1862, and Prime Minister in 1871. He was defeated next year, was knighted in 1873, and in 1877 elected Speaker of the Legislative Assembly. His little work, "The Ballad Poetry of Ireland" has been for years a household book in his native country.

Dugdale, Sir William, an English antiquarian; born in Shustoke, Warwickshire, England, Sept. 12, 1605. His monumental work is the "Monasticon Anglicanum" (1655), reissued with additions 1817–1830 and 1846; a mine of information on the history and biography of English cathedrals, and English history in general. Died in Shustoke, Feb. 10, 1686.

Dugong, an herbivorous mammal, belonging to the Manatees. It ranges from 10 to 20 feet in length. The color is a slaty-brown or bluish-black above and whitish below. Dugongs frequent the shallow quiet waters of bays, inlets and river estuaries where marine vegetation is abundant. They yield a clear oil of the best quality, free from all objectionable smell, and strongly recommended as a remedial agent in lieu of cod-liver oil.



DUGONG.

Dugout, a cave dug in the side of a hill or mountain, used as a dwelling or as a place of refuge from cyclones and tornadoes. These are frequently to be seen in some of the Western States. Also the name of a canoe or boat made from a log of wood.

Dugay-Trouin, Rene, a French seaman; born in St. Malo, June 10, 1673. He entered the royal marines as a captain, and signalized himself so much in the Spanish war that the king granted him letters of nobility, in which it was stated that he had captured more than 300 merchant ships and 20 ships of war. By the capture of Rio de Janiero (1711) he brought the crown more than 25,000,000 francs. Under Louis XV. he rendered important services in the Levant and the Mediterranean. He died in Paris, Sept. 27, 1736.

Duhamel, William, an American physician; born in Maryland in 1827. He attended all the occupants of the White House during three presidential terms and was chief physician to the United States prisons in the District of Columbia 10 years. He died in Washington, D. C., Aug. 15, 1883.

Duilius, Caius, a Roman general; born about 300 B. C. He rose to the highest rank as a naval and military officer. He became consul in 260 B. C., defeating the Carthaginians near Mylæ in that year. In honor of this victory, Rome's first success on the sea, a magnificent column (columna rostrata) was erected.

Dujardin, Felix, a French scientist; born in Tours, April 5, 1801. He is notable for his investigation of organisms such as helmintha and foraminifera, and as the establisher of the views now current as to the nature of protoplasm. He died in Rennes, April 8, 1860.

Dujardin, Karel, a Dutch artist; born in Amsterdam in 1640; died in Venice in 1678.

Duke, in Great Britain, the highest rank in the peerage. The first hereditary duke in England was the Black Prince, created by his father, Edward III., in 1336. The Duchy of Cornwall was bestowed upon him, and was thenceforward attached to the eldest son of the king, who is considered a duke by birth. The Duchy of Lancaster was soon after conferred on Edward's third son, John of Gaunt, and hence arose the special privileges which these two duchies still in part retain. A duke in the British peerage, not of royal rank, is styled "your grace," and is "most noble"; his wife is a duchess. At various periods and in different continental countries the title of duke (Terzog in Germany) has been given to the actual sovereigns of small States. The titles grand-duke and grand-duchess, archduke and archduchess, are in use also on the European continent, the latter to distinguish the princes and princesses of the Austrian imperial family. In the Bible, the word dukes is used (Gen. xxxvi.) for the duces of the Vulgate.

Dulce, a lake of Guatemala, on the E. coast, communicating with the Gulf of Honduras by the lakelet el Golfete.

Dulcimer, one of the most ancient musical instruments, used by various nations in almost all parts of the world, and, in shape and construction, having probably undergone fewer changes than any other instrument. In its earliest and simplest form, it consisted of a flat piece of wood, on which were fastened two converging strips of wood, across which strings were stretched tuned to the natural scale. The only improvement since made on this type are the addition of a series of pegs, or pins, to regulate the tension of the strings, and the use of two flat pieces of wood formed into a resonance-box, for the body.

Du Lhut, Daniel Greysolon, an American pioneer; born in France about 1645; went to Canada about 1670, and became a trader and a leader of bushrangers. He chose the sites of Detroit and Fort William, fought in the Canadian war with the Senecas in 1687, and against the Iroquois in 1689, and was commander of Fort Frontenac in 1695. The city of Duluth is named after him.

Dulk, Albert Friedrich Benno, a German dramatist and polemic prose writer; born in Konigsberg, June 17, 1819; died in Stuttgart, Oct. 30, 1884.

Dulse, a sea-weed, used in some parts as an edible. It has a reddish-brown, or purple, leathery, veinless frond, several inches long, and is found at low water adhering to the rocks. It is an important plant to the Icelanders, and is stored by them in casks to be eaten with fish. In Kamtchatka liquor is made from it.

Dumas, Alexandre, the Elder, a dramatist; born in Villers Cotterets, Aisne, on July 24, 1803. He was the grandson of a French marquis and a celebrated French romancist and San Domingo negress. The works which bear his name amount to some 1,200 volumes, including about 60 dramas; but the only claim he could lay to a great number of the productions issued under his name was that he either sketched the plot or revised them before going to press. He died near Dieppe, Dec. 5, 1870.

Dumas, Alexandre, the Younger, a French dramatist and romancist, son of the preceding; born in Paris, July 27 or 28, 1824. He died in Paris, Nov. 28, 1895.

Dumas, Jean Baptiste Andre, a French chemist; born July 14, 1800. His investigations of the atomic theory and his researches in organic chemistry won him fame. His published works are numerous. He died in Cannes, April 11, 1884.

Du Maurier, George Louis Palmella Busson, artist, caricaturist, and novelist; born in Paris, France, March 6, 1834. He studied in Paris and Antwerp and returning to London, he began to draw on wood for "Once a Week," the "Cornhill Magazine," etc., and also exhibited at the Royal Academy. He subsequently joined the "Punch" staff, and became famous through his weekly drawings for that publication. He also illustrated a large number of books, including Thackeray's "Esmond and Ballads." In 1891 appeared his first novel, "Peter Ibbetson," and in 1894 he issued "Trilby," a story which had a great popularity both in book form and on the stage. He died in London Oct. 8, 1896.

Dumb-cane, a West Indian plant, so called from its acrid properties, which cause a swelling of the tongue when chewed and thus destroy the power of speech.

Dumbness, inability to speak; incapacity to articulate sounds. In a very large number of cases dumbness arises from no malformation of the organs of speech, but is a necessary sequence of congenital deafness, the latter arising from some morbid affection of the ear. Dumbness without deafness is a rare affliction. Hence the institutions designed for the benefit of this class of sufferers are generally said to be for the "deaf and dumb," or for "deafmutes." Dactylology, or the use of finger alphabets, affords a ready means of enabling these afflicted persons to communicate with each other; besides which they can be taught to take note of the exact movements made by a speaker and imitate them.

Dum-dum Bullets, a bullet so named after the place near Calcutta where it was first made. It is one which instead of having its greatest strength at the point is weakest there, so that in striking a bone it will flatten out and shatter it, and not, like the modern steel-coated, sharp-pointed bullet, make a small hole and pass through without any other effect. Dum-dum bullets are now used to some extent by big game hunters. The Hague Peace Congress agreed that dum-dum bullets should not be used in war.

Dumfries, a river port, railway center and parliamentary borough, capital of the county of same name, and the chief place in the S. of Scotland. It is chiefly known to the world as the residence in later years of Robert Burns. Pop. (1901) 72,569.

Dummler, Ernst Ludwig, a German historian; born in Berlin, Jan. 2, 1830; studied at Bonn and Berlin. He is a member of the Academy of Munich, and since 1871 he has been an ordinary member of the Historical Commission of Munich. He was elected a corresponding member of the French Academy of Sciences in 1882.

Dumont, Julia Louisa, an American writer; born in Waterford, O., October, 1794. She has the distinction of being one of the earliest women of the West whose writings have been preserved. She contributed largely to periodicals both in prose and verse.

Dumont, D'Urville, Jules Sebastian Cesar, a French navigator; born in 1790. After completing his studies at Caen he entered the French navy, in which he ultimately rose to be rear-admiral. In 1826–1829 he commanded the corvette "Astrolabe," which was sent to obtain tidings of La

Perouse, and to make hydrographic observations. He made surveys of the coasts of Australia, New Zealand, etc., and found remains of the shipwreck of La Perouse on one of the Pacific islands. In 1837 he sailed with the "Astrolabe" and "Zelee" on a voyage of Antarctic discovery, and after many dangers, and having visited many parts of Oceania, he returned in 1840. He died in 1842.

Dumouriez, Charles Francois, a French general; born in Cambrai, Jan. 25, 1739. He entered the army early in life and at 24 years of age had received 22 wounds, and was made a Knight of St. Louis. He afterward became a minister of Louis XVI., but was later dismissed. Still determined to devote himself to the service of the army, he proceeded to Valenciennes, where he soon gained immortal fame by his valor and his firmness, displayed at the head of the French soldiers, having succeeded Lafayette in the command of the Army of the North. He rendered very important service to his country by the stand he so skillfully made against the Prussian invaders in the forest of Argonne, in September, 1792; the famous "Cannonade of Valmy" taking place on the 20th of the same month. His rapid conquest of Belgium followed. Notwithstanding his success, the Directory, not without motive, entertained suspicions regarding his designs. Dumouriez had entered into secret negotiations with the enemy, and on learning that an accusation of treason was to be brought against him, he with several of his officers, fled to the Austrian headquarters. He refused, nevertheless, to serve against his country; wandering for some time through Europe, and lastly settled in England, where he died near Henley-upon-Thames, March 14, 1823.

Dun, Edwin, an American diplomatist; born in Chillicothe, O., in July, 1848. He went to Japan in 1873, becoming successively United States Second Secretary of Legation, First Secretary of Legation, and, from 1893 to 1897, United States Minister. During the war between China and Japan the Chinese government placed its interests in Japan in his care.

Dunbar, a town of Scotland; a royal and municipal borough and seaport in Haddingtonshire, at the mouth of the Firth of Forth. It is a place of great antiquity, having originated in a castle once of great strength and importance which underwent several memorable sieges, on one occasion being successfully defended against the English for 19 weeks by Black Agnes, Countess of Dunbar. In 1650 Cromwell totally defeated the Scottish army under David Leslie near the town. The harbor is not very commodious, but the town is an important fishing station.

Dunbar, Paul Laurence, an American poet; born of negro parents in Dayton, O., June 27, 1872. He was graduated at the Dayton High School in 1891, and since then has devoted himself to literature and journalism. Since 1898 he has been on the staff of the Librarian of Congress.

Dunbar, William, a Scotch poet; born in Salton, Lothian, about 1465. He was a Franciscan friar, but was often employed by James IV. in affairs of state. He died about 1530.

Duncan, Adam, Viscount, a Scotch naval officer; born in Dundee, July 1, 1731. He went to sea when young and in 1794 became vice-admiral. The following year he was appointed commander of the North Sea fleet, and in October, 1797, won a brilliant victory over the Dutch fleet off Camperdown, for which he was rewarded with the title of Viscount Duncan and a pension of $10,000 a year. He died Aug. 4, 1804.

Duncan, William Wallace, an American clergyman; born in Boydtown, Va., Dec. 20, 1839. He was graduated at Wofford College (S. C.) in 1858, becoming a minister of the Methodist Episcopal Church, South, and serving as chaplain of a Confederate regiment during the Civil War. From 1875 to 1886 he was Professor of Intellectual and Moral Philosophy at Wofford College. Since 1886 he has been a bishop of the Methodist Church, South.

Dunce (a word introduced by the Thomists, or disciples of Thomas Aquinas, in ridicule of the Scotists, or disciples of John Duns Scotus, schoolman, who died A. D. 1305), originally a subtle sophist given to caviling where he cannot refute. This was the sense in which the Thomists employed the term. When the reaction against the schoolmen took place at the Reformation the merits of those acute metaphysicians were temporarily decried, and the celebrated John Duns Scotus coming in for a more than ordinary share of disparagement, he, though a man of very subtle intellect, was held by the more ignorant or prejudiced of the Reforming party to be a man of invincible stupidity. He was therefore made to stand as the prototype of all modern dunces.

Dunciad, The, a celebrated satirical poem by Pope, in which he gibbets his critics and foes.

Duncombe, Thomas Slingsby, an English politician; born in 1796. He was elected member of Parliament for Hertford in 1824, assisted in carrying the Reform Bill, and became prominent in the extreme Liberal party. In 1834 he was returned for Finsbury, which seat he retained in the Parliament which assembled in 1859. In 1842 he presented the Chartist petition, signed by 3,000,000 of the lower classes, in favor of universal suffrage, vote by ballot, short Parliaments, etc. In 1842 the then home secretary, Sir James Graham, having sanctioned the opening of the letters of Mazzini, Duncombe, in the House of Commons, denounced, with scathing invective, the adoption of the postoffice spy system on English soil. He was an earnest advocate of Jewish emancipation; and his motion, 1858, for placing Baron Lionel Rothschild on a committee of the House of Commons was soon followed by the concession of the right of Jewish members to sit in the House of Commons. He died Nov. 13, 1861.

Dundee, a flourishing borough and seaport of Scotland in County Forfar, on the Tay, 8 miles from the sea, and 37½ miles N. E. of Edinburgh. Dundee possesses many shipyards, sugar refineries, tanneries, and machine shops. Its linen trade is the largest in Great Britain. Pop. (1901) 160,871.

Dundonald, Thomas Cochrane, 10th Earl of, a British admiral; born in Lanarkshire, Dec. 14, 1775. At the age of 18 he embarked with his uncle, then Captain, and afterward Sir Alexander Cochrane, in the "Hind," of 28 guns, and soon distinguished himself by his daring and gallantry. His enemies succeeded in 1814 in convicting him on a charge — since proved to be false — of originating a rumor, for speculative purposes, that Napoleon had abdicated. He was expelled from Parliament, deprived of all his honor, imprisoned for a year, and fined $5,000. The electors of Westminster immediately paid his fine and reëlected him, but he had to remain in prison till the expiration of his sentence. In 1818 he took service in the Chilean navy, his exploits greatly aiding the national independence of that country, as well as soon after of Brazil. In 1832 he was restored to his rank in the British navy. He did much to promote the adoption of steam and the screw propeller in warships. He wrote an autobiography, which, though left incomplete, is a most interesting work. He died in Kensington, England, Oct. 31, 1860.

Dune, a low sand-hill; an accumulation of sand on the seashore; a hill-fort, or a regular building commonly called a Danish fort. Sand dunes are made by the blowing of sand, this material having been produced by the grinding down of rocks under the influence of breakers on the seashore or coast, or any similar agency. Such sand dunes in many places skirt the shores, in some places encroaching on and covering what once was cultivated land.

Dunedin, capital of Otago, New Zealand; the most important commercial town in the colony; at the upper extremity of an arm of the sea, about 9 miles from its port, Port Chalmers, with which it is connected by railway. Though founded in 1848, its more rapid progress dates only from 1861, when extensive gold fields discovered in Otago attracted a large influx of population. Pop. (1901) 24,879; including suburbs, 52,390.

Dunfermline, a town in Fife, Scotland, 16 miles N. W. of Edinburgh. It is a place of antiquity, from 1057 till 1650 a frequent residence of Scotland's kings, and for more than two centuries their place of sepulture. It was here that Charles II. signed the Covenant in 1650. Andrew Carnegie, the American steel millionaire, was born in Dunfermline, and he has bestowed many gifts on the place. Pop. (1901) 25,250.

Dung Beetle, a name given to a number of lamellicorn beetles, which live in great part on the dung of quadrupeds. One of the commonest, the black dor, is interesting in many ways, on account of its elaborate burrows and stores under cowdung and the like.

Dunkers, or **Dunkards,** a sect of German Baptists, founded by Alexander Mack, about A. D. 1708. Persecution drove them in 1723 to the United States, where they are now divided into four branches. In 1900 they reported 2,998 ministers; 1,129 churches; and 111,481 communicants.

Dunkerque, or **Dunquerque,** a fortified seaport town of France, Department of Le Nord, 40 miles from Lille. In 1388 this town was burned by the English; after which its possession was repeatedly contested by the French and Spanish. In 1658 it was given up to the English by Turenne; and in 1662, sold by Charles II. to Louis XIV., for $1,000,000.

Dunlap, William, an American dramatist and painter; born in Perth Amboy, N. J., Feb. 19, 1766. He painted George Washington's portrait, still authentically existent, and for five years (1784–1789) worked under West in London. Returning, he wrote several successful plays. He was one of the founders of the National Academy of Design. He died in New York, Sept. 28, 1839.

Dunlin, a bird belonging to the sandpipers. It is a very common shore bird, being generally met with in large flocks. They are usually very tame.

Dunne, Edward Joseph, an American clergyman; born in Tipperary, Ireland, in 1848. He came to the United States when he was a year old, was educated at the Theological Seminary in Baltimore, and ordained a Roman Catholic priest. He was appointed Bishop of Dallas, Texas, in 1893.

Dunois, Jean; called the Bastard of Orleans, Count of Dunois and Longueville, one of the most brilliant soldiers that France ever produced; born in Paris, Nov. 23, 1402, the natural son of Louis Duke of Orleans, brother of Charles VI., and brought up in the house of that prince along with his legitimate children. His first important military achievement was the overthrow of the English at Montargis (1427). He next threw himself into Orleans with a small body of men, and bravely defended the place till the arrival of the famous Joan of Arc, whose religious enthusiasm combined with the valor of Dunois restored the drooping spirits of the French and compelled the English to raise the siege. This was the turning point in the fortunes of the French nation. In 1429 Dunois and the Maid of Orleans won the battle of Patay, after which he marched, with a small body of men, through the provinces then overrun by the English and took the fortified towns. The capture and death of Joan of Arc arrested for a moment the progress of the French arms, but the heroism of Dunois was irresistible. In 1448-1450 he drove the English from Normandy, and in 1455 he had swept them from Guienne also, and permanently secured the freedom of France from all external pressure. He died Nov. 24, 1468.

Duns Scotus, Joannes, a Scotch metaphysician, head of the Schoolmen, called "the subtle doctor"; born in Scotland, 1265 or 1274. The word dunce, in its present application, probably comes from his name used ironically. He died in Cologne, Nov. 8, 1308.

Dunstan, St., an Anglo-Saxon ecclesiastic; born in Glastonbury in 925. He entered the Benedictine order, became an anchorite at Glastonbury, and in 945 was made abbot by King Edmund. After the death of Edmund, Edred, the next king, made him his prime minister and principal director in civil and ecclesiastical affairs. In the reign of Edwy he was banished, but was recalled by Edgar, and made Archbishop of Canterbury. He was again deprived of power on the accession of Ethelred in 978. He died in Canterbury in 988.

Duodecimal System, in numeration, a system of numbers the scale of which is 12.

Dupanloup, Felix Antoine Philibert, a French prelate and theologian; born in Savoy, Jan. 3, 1802. He died in Lacombe. Isere, Oct. 11, 1879.

Dupleix, Joseph Francois, governor of the French Indies; born in Landrecies, France, Jan. 1, 1697. At the age of 18 he was sent to sea on board an East Indiaman, and in 1720 his father had him appointed to a seat in the Council at Pondicherry. Ten years later he became superintendent at Chandernagore in Bengal. The remarkable success of his administration here led to his being appointed, in 1741, governor-general of all the French Indies with the title of Nawab. Dupleix was recalled by Louis XV., who had patched up an agreement with England on the subject of the rival Indian companies, which was embodied in the futile peace of Pondicherry, 1755. Having spent his fortune in upholding French interests in India, he died in poverty and neglect in Paris Nov. 10, 1764.

Dupont, Eleuthere Irenee, an American manufacturer; a son of PIERRE SAMUEL DUPONT; born in Paris, France, June 24, 1771; he was placed in the royal mines of Essonne to acquire a practical knowledge of the manufacture of gunpowder. He remained there till the French Revolution broke out, when he was called to take charge of his father's printing and publishing house. He came to the United States in 1799, and soon after his arrival he discovered the bad quality of gunpowder that was made in the United States. He revisited the Essonne mills in January, 1801, to procure plans, models, and machinery, returning in August. Soon afterward he erected his first powder works on the Brandywine river, near Wilmington, Del., which finally proved a success. He erected other works, which are still in operation. He died in Philadelphia, Pa., Oct. 31, 1834.

Dupont, Henry Algernon, an American military officer; grandson of ELEUTHERE IRENEE DUPONT; born in Wilmington, Del., July 30, 1838; graduated at the United States Military Academy; served through the Civil War. After the war he was a member of the board to assimilate the tactics for the three arms of the service. In 1834 he became proprietor of the celebrated powder mills bearing his name near Wilmington, Del. Under his direction they grew to immense size and became an important factor in the Civil War. He resigned from the army in 1875, and was chosen United States Senator from Delaware in 1895, but was not seated.

Dupont, Samuel Francis, an American naval officer; born in Bergen Point, N. J., Sept. 27, 1803. He was commissioned a midshipman when 12 years old. During the Mexican War he saw much active and gallant service on the California coast. In 1856 he was made a captain, and the following year was placed in command of the steam frigate "Minnesota," which conveyed Mr. Reed, the American minister, to China. In 1862 he was put in command of the South Atlantic blockading squadron. He was promoted to rear-admiral in August, 1862. He greatly contributed to the organization of the Naval School at Annapolis. He died in Philadelphia, Pa., June 23, 1865.

Dupont, Victor Marie, an American manufacturer; son of Pierre Samuel Dupont de Nemours (dropping de Nemours); born in Paris, France, Oct. 1, 1767; entered the diplomatic service as attache to the French legation in the United States in 1787. He returned to France; withdrew from the government service and came to the United States in January, 1800, with his father and mother. He removed to Angelica, N. Y., in 1806 and to Wilmington, Del., in 1809, where he joined his brother and established a cloth manufactory. He was for a time a member of the Delaware Legislature, and a director of the Bank of the United States. He died in Philadelphia, Pa., Jan. 30, 1827.

Dupont, de Nemours, Pierre Samuel, a French economist; born in Paris Dec. 14, 1739. In 1782 and 1783, with Dr. Hutton, the English agent, he negotiated the basis of the treaty by which the independence of the United States of America was acknowledged. In 1787 and 1788 he was appointed by Louis XVI. secretary to the assembly of the notables. In 1789 he became a member of the 1st National Assembly. He was twice president of the National Assembly. Under Robespierre he was imprisoned, and nothing but the fall of the tyrant preserved him. He was afterward a member of the council of elders. After the Directory was abolished he came to the United States, in 1798. In 1802 he returned to France. In 1814 Dupont was made secretary of the provisional government which prepared the way for the return of the house of Bourbon to the throne of France. After Napoleon's return from Elba he settled in the United States where his two sons had already become citizens. He died near Wilmington, Del., Aug. 6, 1817.

Dupre, Jules, a French landscape painter; born in Nantes, April 5, 1812. He died in L'Isle Adam, Oct. 6, 1889.

Dupuy, Eliza Ann, an American story-writer; born in Petersburg, Va., about 1814. Most of her stories were published in the New York "Ledger." She died in New Orleans, January, 1881.

Duquesne, Abraham, a French admiral; born in Dieppe in 1610; distinguished himself during and after the year 1637 in the war against Spain. In 1647 he commanded the expedition against Naples. In the Sicilian war he thrice defeated the combined fleets of Holland and Spain, under the renowned De Ruyter. After he had reduced Algiers and Genoa Louis XIV. conferred upon him the fine estate of Bouchet, and made it a marquisate, with the title of Duquesne. He was a Protestant and the only person exempted from the banishment of the Huguenots occasioned by the repeal of the Edict of Nantes. He died in Paris, Feb. 2, 1688.

Duran, Carolus, a French painter; born in Lille, July 4, 1837. In 1898 he made a lecturing tour to the United States, this being his second visit.

Durant, Henry Towle, an American philanthropist; born in Hanover, N. H., Feb. 20, 1822. He graduated from Harvard; became a lawyer; and changed his name from H. W. Smith. On the death of his only son he abandoned his profession and devoted his energies to philanthropy. He founded Wellesley College. He died in Wellesley, Mass., Oct. 3, 1881.

Durango (also called Guadiana and Ciudad de Victoria), a town of Mexico, on a dry plateau, 6,700 feet above sea level, 500 miles N. W. of the City of Mexico. Pop. 27,000. Area of State of Durango, 38,009 square miles; pop. (1900) 371,274.

Durazzo, a port of Turkish Albania, on the Adriatic, 50 miles S. of Scutari. It is a decayed place, with 1,200 inhabitants, and a ruined citadel; but the harbor is the most important of Middle Albania.

Durban, the seaport of the colony of Natal, South Africa; on the shore of a nearly land-locked tidal bay. The climate is healthy and suitable for Europeans. The town was laid out by the Dutch, who formed a republic in Natal before the British took the colony in 1842. During the war against the Boers in 1899-1900 the British made Durban a base of supplies. Pop. (Dec. 31, 1900) 48,410.

Durbar, an audience room in India; also a ceremonial audience or conference therein.

Durer, Albert, a German painter; born in Nuremberg in 1471. Durer's talent early developed itself, and took a decided turn for painting. His fame spread far and wide. Maximilian I. appointed him his court painter, and Charles V. confirmed him in this office. He was the first in Germany who taught the rules of perspective, and of the proportions of the human body, according to mathematical principles. He died in Nuremberg in 1528.

Duress, in law, a condition that may be either physical, that is, by actual confinement or restraint of liberty, or moral, that is, by threats or menaces, in either case the overt act must be to compel a person to do some act.

Durfee, Job, an American jurist; born in Tiverton, R. I., Sept. 20, 1790; graduated at Brown University in 1813. He was elected to Congress in 1820, and Chief-Justice of Rhode Island in 1835. He died in Tiverton, R. I., July 26, 1847.

Durfee, William Franklin, an American engineer; born in New Bedford, Mass., Nov. 15, 1833. He studied at Lawrence Scientific School, Harvard, and turned his attention to steel manufacture, his plant turning out in 1865 the ingots from which were made the first steel rails in the United States.

Durham, a city in Durham Co., N. C.; 26 miles N. W. of Raleigh. It was the scene of the treaty between Generals Sherman and Johnston at the close of the Civil War. Pop. (1900) 6,679.

Durham, an ancient city and parliamentary borough in England, capital of the county of the same name, on the river Wear, which is crossed here by four bridges, 14 miles S. of Newcastle. The cathedral occupies a height overlooking the Wear. The larger portion of it is Norman in style, with insertions in all the English styles. It was founded by William de Carilepho, assisted by Malcolm, King of Scotland, in 1093. Pop. 14,935.

Durham, University of, an English university located at Durham and which was originated in 1831 under Bishop Van Mildert, by the appropriation of part of the property belonging to the cathedral chapter.

Duroc, Michel Gerard Christophe, Duke of Friuli, a French officer under Bonaparte; born in Pont-a-Mousson, Oct. 25, 1772. He served as aide-de-camp to Napoleon in the Italian and Egyptian campaigns. In 1805 he was made grand-marshal of the palace, and was frequently employed in diplomatic missions, though he still took his full share in the wars of France till the time of his death. He was a great favorite of Napoleon, and was killed by his side at the battle of Bautzen, May 22, 1813.

Durra, a genus of grasses, which is also called durra millet and Indian millet, or sorgho grass. The genus is closely allied to sugar-cane and beard-grass. Durra yields a very abundant produce, in this respect even rivaling maize, but the meal does not make good bread; it is excellent for puddings, and is prepared for food in various other ways. The sweet pith of the culm is eaten, and is also of value as a source of sugar, for which it is successfully cultivated in the United States. It is also cultivated in Asia, Africa, and the S. of Europe.

Duruy, Victor, a French historian and statesman; born in Paris Sept. 11, 1811. He died in Paris Nov. 25, 1894.

Duse, Eleanora, an Italian actress; born in Vigevano, Italy, in 1861. She has played in all the principal countries of Europe and visited the United States. She has been twice married and divorced.

Dussaud's Telescope, an instrument invented in 1898 by M. Dussaud, a French scientist, and which sends pictures by wire. The instrument consists of a camera, at the opposite end from the lens is a revolving screen worked by clockwork and pierced with small openings arranged in spiral form. Behind this is a system of selenium layers connected with a battery. By means of this machine an observer at the receiving station sees upon the screen the exact image produced in the camera of the transmitter.

Dusseldorf, a town of Prussia, in the Rhenish province, beautifully situated among villas and gardens on the Rhine, 22 miles N. N. W. of Cologne. It has the honor of having founded a school of painting. Pop. (1900) 212,949.

Dutch, the people and language of Holland or the Netherlands.

Dutch Auction, a kind of auction in which articles are put up at a high price and lowered till a bidder is met with.

Dutch Church, the church to which the majority of the people of Holland adhere. In the 16th century the ancestors of the present Dutch wavered for a time between the Lutheran and the Reformed Churches. In 1571 they publicly professed their allegiance to the latter by embodying its doctrines in the Belgic Confession of Faith, published in that year. One of the most notable events in the history of the Dutch Church, after the yoke of Spain was broken, was the Synod of Dort, in 1618. James Arminius, Professor of Theology at Leyden, having rejected the Calvinistic tenets and adopted those which were destined to be called after himself, Arminian, a synod was convened at Dort to examine and, if need be, condemn his views. This was done, but with little effect, the views of Arminius prevailing to a greater extent after than they had done before their condemnation. The present Dutch Church remains nominally Reformed.

Dutch Courage, false or fictitious courage, usually applied to the bravado inspired by partial intoxication.

Dutchman, The Flying, a phantom ship which sailors believed could often be seen about the Cape of Good Hope. The story is that a Dutch captain, Vanderdecken by name, being tossed about by adverse winds while trying to round the Cape, swore with many oaths that he would accomplish his purpose if he beat to and fro till the judgment day, and as a punishment his ship never touched land.

Dutch Metal, sometimes called Dutch gold or Dutch leaf, an alloy of copper and zinc; a kind of brass containing a large percentage of copper.

Dutch Oven, a spider, skillet, or camp-oven used by those who cook by hot coals on the hearth.

Dutch School, a school of art which cannot be said to possess the perfections that are to be observed in the Flemish school; their subjects are principally derived from the amusements of the peasants.

Duty, a tax or impost levied upon imports, and frequently upon exports.

Duval, Claude, an English highwayman; born in Domfront, Normandy, in 1643. He went to England at the Restoration, in the train of the Duke of Richmond. Taking soon to the road, he robbed many gentlemen of their purses, and ladies of their hearts, till, having been captured while drunk, he was hanged at Tyburn, Jan. 21, 1670.

Duyckinck, Evert Augustus, an American author; born in New York city, Nov. 23, 1816. He died there, Aug. 13, 1878.

Dvorak, Antonin, a Bohemian composer; born near Muhlhausen, Sept. 8, 1841. Attention was first called to him by what remains his best work, a "Stabat Mater," the most modern and one of the finest settings of this hymn. He came to the United States in 1892, and became director of the National Academy of Music in New York city.

Dwarf, a human being much below the ordinary size of man.

Dwarfing, the process of training trees or shrubs so as to cause them never to reach more than a very small size.

Dwarka, a maritime town of Guzerat, India, on the W. side of the peninsula of Kathiawar, in the Dominion of Baroda, 235 miles S. W. of Ahmedabad. On an eminence overhanging the seashore stands a great temple of Krishna, visited annually by 10,000 pilgrims.

Dwight, Francis, an American educator; born in Massachusetts, March 14, 1808; turned his whole attention to the promotion of common school education in our country. He died Dec. 15, 1845.

Dwight, Harrison Gray Otis, an American missionary; born in Conway, Mass., Nov. 22, 1803; was graduated at Hamilton College, New York, and became a missionary to the Armenians, making Constantinople the center of his field of operations. He died Jan. 25, 1862.

Dwight, John Sullivan, an American musical critic; born in Boston, May 13, 1813. He died Sept. 5, 1893.

Dwight, Joseph, an American soldier; born in Hatfield, Mass., Oct. 16, 1703; graduated at Harvard University in 1722. He was eminent both as a judge and a soldier. He was also for 11 years a member of the General Council of Massachusetts. He died in 1765.

Dwight, Nathaniel, an American educator; brother of Timothy of Yale College; born in Northampton, Mass., Jan. 31, 1770; prepared and published the first school geography ever issued in the United States. He died June 11, 1831.

Dwight, Theodore, an American journalist; brother of Timothy; born Dec. 15, 1764. He was a well-known Federalist, and a member of Congress. He died June 12, 1846.

Dwight, Theodore, an American writer; son of Theodore; born March 3, 1796. He died Oct. 16, 1866.

Dwight, Theodore William, an American educator, jurist, and editor; born in Catskill, N. Y., July 18, 1822 He died in Clinton, N. Y., June 28 1892.

Dwight, Timothy, an American Congregational clergyman; born in Northampton, Mass., May 14, 1752 He was president of Yale College from 1795 to 18 7. He died in New Haven, Conn., Jan. 11, 1817.

Dwight, Timothy, an American Congregational clergyman; born in Norwich, Conn., Nov. 16, 1828; grandson of Timothy Dwight. He was president of Yale University from 1886 till 1898, when he resigned. He was one of the members of the New Testament Revision Committee.

Dwight, William Buck, an American geologist; born in Constantinople, Turkey, May 22, 1833. He graduated at Yale in 1854, at Union Theological Seminary in 1856, and at Yale Scientific School in 1859. He turned his attention to geology, became an instructor at West Point and founded Englewood (N. J.) Female Institute. After 1894 he was New York State Examiner in Geology.

Dwina, the name of two important rivers of Russia.

Dyaks, or **Dayaks,** the Malay name for the race which constitutes the bulk of the aboriginal population of Borneo. Physically they closely resemble the Malays, to whom they are doubtless akin, but are somewhat taller; they are intelligent, hospitable, and unsuspicious, and greatly excel the Malays in truthfulness and honesty. The coast tribes have adopted many Malay words, and some have completely adopted the Malay speech. Even the most uncivilized tribes have many ingenious arts and industries. Their chief weapon is the blowpipe, not the bow. The barbarous custom of systematic head-hunting is dying out, though the heads of enemies are still cherished trophies of the warrior. The Sea-Dyaks were long famous as untamable pirates.

Dyeing and Dyestuffs, the art of imparting colors to textile and other materials. Fifty years ago natural dyestuffs alone were employed by the dyer, but in 1856 the English chemist Perkin, while endeavoring to make artificial quinine, accidentally discovered a simple method of making the rich purple coloring matter mauve, from aniline. Other chemists soon discovered how to derive from aniline quite a number of colors: red, blue, purple, green, etc. The vegetable dyestuffs are gradually being superseded by the newer colors, very many of which are entirely satisfactory as regards fastness to light and other influences.

Dyer, Nehemiah Mayo, an American naval officer; born in Provincetown, Mass., in 1839. He enlisted in the navy in 1861 and was promoted for gallantry in the Civil War. He rose steadily through the grades to that of captain in 1897, and took part in the battle of Manila bay the following year; was promoted rear-admiral in 1901 and retired the same year.

Dykes, John Bacchus, an English composer; born in Hull, March 10, 1823; graduated at Cambridge; was ordained in 1847, and was appointed precentor of Durham Cathedral in 1849. He composed a number of hymn tunes, most of which are to be found in all American collections. Among these are "Nearer, My God, to Thee," and "Jesus, Lover of My Soul." He died Jan. 22, 1876.

Dynameter, an instrument for measuring the magnifying power of a telescope.

Dynamics, the science that deals with the laws of force in their relation to matter at rest or in motion; as such it is differentiated from kinematics, which considers motion mathematically, and apart from the forces producing it. Dynamics is divided into two great branches: statics, which treats of solid bodies at rest under the action of forces; and kinetics, which treats of the action of forces in producing motion in solid bodies. Formerly the latter alone was called dynamics, and to this, in conjunction with statics, the general name mechanics was given. In the wide sense dynamics includes also hydrostatics.

Dynamic Theory, an hypothesis broached by Kant that all matter originated from the action of two mutually antagonistic forces — attraction and repulsion. All the predicates of these two forces are attributed by Kant to motion. As applied to heat, it is a theory which represents a heated body as being simply a body the particles of which are in a state of vibration. This vibratory movement increases as the body is still more heated, and diminishes as it cools. It is called also the mechanical theory of heat.

Dynamite, an explosive produced by the admixture of nitroglycerin with a siliceous infusorial earth known under the German name as kieselguhr. Nitroglycerin was discovered in 1846, but it was not till nearly 20 years later that dynamite was discovered.

Dynamite, which has a reddish-brown color, consists of 1 part of kieselguhr to 3 parts of nitroglycerin, and has a specific gravity varying from 1.59 to 1.65. It burns with a yellowish flame, and in small quantities without danger; but explodes with great violence when fired by a detonating fuse. The time of explosion of a dynamite cartridge has been calculated to occupy only the 24,000th part of a second; a fact which explains the violent nature of its action. Under water it loses only 6 per cent. of its power, and is consequently greatly in requisition for subaqueous operations. Loose tamping, such as sand or water, is found to be amply sufficient, and in many instances boreholes can be dispensed with altogether, the dynamite being simply laid on the surface of the bodies to be blasted, and covered with sand or clay. For quarrying purposes, dynamite possesses too great shattering power, and gunpowder is more generally employed.

Dynamite Cruiser, a cruiser designed especially for utilizing dynamite guns in naval warfare. There is but one such vessel in existence, the "Vesuvius," owned by the United States government, launched in 1888. The "Vesuvius" bore a conspicuous part in the early naval operations against Santiago de Cuba in 1898.

Dynamite Gun, an invention of Mr. Mefford, in 1883, and since developed by Lieutenant Zalinski, U. S. A., to propel a projectile containing dynamite. No fuse is required, as the shell explodes by concussion as it hits its mark; and it is easy to perceive that a single shell of this description striking the side of any ironclad in existence would send her to the bottom.

Dynamo-electric Machines, apparatus for generating electric currents by means of the relative movement of conductors and magnets.

Dynamometer, an instrument for measuring the force used in overcoming resistance and producing motion.

Dynograph, an apparatus used in modern railroading for testing the inequalities in the road-bed, the track, etc. It consists of a recording instrument mounted in a car and geared to the wheels thereof. An automatic pencil records the slightest roughness or inequalities, and locates them.

Dysentery, a disease consisting in an inflammation of the large intestine, especially its lower end.

Dyspepsia, indigestion or difficulty of digestion; a disorder of the digestive function.

Dysphonia, a difficulty in speaking. The disorder known as "clergyman's sore-throat" is a common example. Rest of the vocal organs, tonics, muscular exercise, change of scene, are generally needed to aid recovery.

Dyspnœa, a difficulty in breathing. It is sometimes hysterical, sometimes a symptom of disease of the heart or lungs.

Dziggetai, a species of wild ass, more horse-like than the others. It is probably the hemionus ("half-ass") of Herodotus and Pliny. It inhabits the elevated steppes of Tartary, extending into the S. of Siberia and to the borders of India. The dziggetai lives in small herds, sometimes of several males and several females, sometimes with a single male with about 20 females and foals. It has been partly domesticated, but does not seem to breed in captivity. It is also known by the names of kiang, khur, and goor.

E

E e, the second vowel and fifth letter of the Latin alphabet, and of other alphabets, such as the English, German, French, Italian, Spanish, etc., derived from it.

Eads, James Buchanan, an American engineer; born in Lawrenceburg, Ind., May 23, 1820. He early designed some useful boats for raising sunken steamers, and in 1861, when called to advise the National government, constructed within 100 days eight ironclad steamers for use on the Mississippi and its tributaries. He afterward built a number of other ironclads and mortar-boats, which were of considerable service to the North. His steel bridge across the Mississippi at St. Louis, with its central arch embracing a clear span of 520 feet, ranks deservedly among the notable bridges of the world; his works for improving the South Pass of the Mississippi delta were successfully completed in 1875–1879; and his great plan for deepening the river as far as the mouth of the Ohio by means of jetties has been demonstrated to be entirely practicable. In 1884 he received the Albert Medal of the Society of Arts, being the first American citizen to whom this honor had been awarded. He died in Nassau, New Providence, March 8, 1887.

Eagle, a name given to many birds of prey in the family Falconidæ. The golden eagle, the white-headed eagle, and the sea eagles are characteristic examples. The falcon family includes over 300 predacious birds, feeding for the most part on living animals, hunting by day, and living usually on exposed rocky places. They are cosmopolitan in distribution. It is a matter of much difficulty to separate the eagles definitely from the related falcons, buzzards, kites, and hawks.

The white-headed or bald eagle is the emblem of the United States, and therefore honored by every American. The golden eagle is a large and magnificent bird. The predominant color is dark, tawny brown, but the back of the head and neck are more tawny and look golden in the sunlight. They have their homes in remote rocky regions, but often wander far in search of booty. The species is widely distributed in North America, Europe, and Asia, and some of the finest specimens can be seen in the mountainous regions of the United States, where they often show peculiar daring in the pursuit of prey.

SEA EAGLE.

The crested eagles found in South and Central America, are in some species distinguished by tufts of feathers on the back of the head. The harrier eagle is an Old-World genus represented in Europe, North Africa, and Western Asia. The white-tailed or sea eagles are absent only in South America. The fishing eagle or fishing-hawk is an almost cosmopolitan bird. It is remarkable among eagles for the backward grasping adaptation of the outermost toe. The harpy eagle of South America seems to be a buzzard. There are several eagles in Australia.

Eagle, an emblem in heraldry, war, and legend. The eagle, borne upon a spear, was used by the Persians as a standard in the battle of Cunaxa, B. C. 401. The Romans used eagles of silver, or more rarely of gold, carried in the same way as standards.

GERMAN EAGLE.

FRENCH EAGLE.

The Napoleon dynasty of France also adopted the eagle as their symbol. A double-headed eagle is the emblem of Russia, Austria, and Prussia.

EAGLE ON SEAL OF UNITED STATES.

Eagle, a gold coin of the United States, value $10; half-eagle, $5; quarter-eagle, $2.50; double eagle, the largest gold coin of this country, $20.

Eagle, in astronomy, a constellation in the Northern Hemisphere. The constellation comprises stars of the first, second, and third magnitudes. The most important of these is Altair, a star of the first magnitude, from which the moon's distance was once computed.

Eagle Hawk, a name applied to several eagles of comparatively small size, natives of warm climates.

Eagle Owl, a genus of large owls. The disk of feathers round the ear is incomplete above, there is a large free tuft on each side, and the feathers on the legs extend down to the toes. The members of the genus are widely distributed, occurring in most parts of the world except Australia. The eagle owl of the United States, the Virginian horned owl, is very bold and powerful. It carries off with ease almost any inhabitant of the poultry-yard.

Ear, the organ of hearing; is composed of three parts, the external ear, the middle ear, or tympanum, and the internal ear or labyrinth.

Earl, a degree of the British nobility between marquis and viscount, the title of highest antiquity in England. An earl's wife is called a countess.

Earle, Mrs. Alice Morse, an American writer; born in Worcester, Mass., April 27, 1853. She has written extensively upon the manners and customs of the colonial period in New England and New York.

Earlham College, a co-educational institution in Richmond, Ind., founded in 1847.

Earl Marshal, a great officer of England, who had, anciently, several courts under his jurisdiction. He is the head of the College of Arms (Heralds' College), grants armorial bearings, and determines all claims in connection with them.

Early, Jubal Anderson, an American military officer; born in Franklin co., Va., Nov. 3, 1816; graduated at West Point, and served in the Florida and Mexican wars. During most of the years 1838–1861, he practised law in his native State. On the outbreak of the Civil War he entered the Confederate service as a colonel. In 1864, after some successes, he was defeated by Sheridan in several battles; and, Custer having also routed him at Waynesboro, in March, 1865, he was relieved of his command a few days later. He subsequently returned to the practice of law. He died March 2, 1894.

Early English, properly employed to designate the period between 1250 A. D. and 1350 A. D., but commonly used to express any period between 1250 and the close of the 15th century. In architecture, the first of the pointed or Gothic styles of architecture used in England.

Earnest, something given by a buyer to a seller as a token or pledge to bind the bargain; a part or portion of goods delivered into the possession of the buyer at the time of the sale as a pledge or security for the complete fulfillment of the contract.

Ear of Dionysius, a famous cavern near Neapolis, in which the slightest whisper was audible at a great distance; also an acoustic instrument with a large mouthpiece to collect the sound, which a flexible tube conducts to the ear of the person.

Earth, the name of the planet which we inhabit.

Earth Currents. Telegraph lines and particularly long submarine lines, are constantly troubled by violent electrical disturbances of the nature of transient currents which rush in one direction or the other through the line. The name earth currents is given to these movements of electricity. They are frequently so powerful and so changeable as to render the use of the telegraphic instruments for the time impossible, the earth currents passing so rapidly as to confuse the speaking signals completely. The nature of these disturbances is not thoroughly understood.

Earthenware, a general expression which covers all ceramic work, such as stoneware, delft, porcelain, etc.

Earthquake, the term applied to any tremor or vibration of the ground produced by subterranean causes. Many earthquakes are so gentle as to pass almost unrecognized, others excite general alarm without causing damage, while some spread destruction over wide areas. Earthquakes are felt either as vertical shocks, from below upward, as horizontal or lateral shocks, or as undulatory movements. At the time of the great earthquake of Riobamba, Ecuador, the bodies of many of the inhabitants were projected across the river and fell upon La Culla, a hill more than 300 feet high. At New Madrid, Mo., during the earthquake of 1811–1812, the trees bent as the earth-waves passed under them, immediately afterward recovering their position. Observations of this kind have led physicists to the belief that an earthquake is a wave or true undulation of the crust.

Earthquakes are propagated not infrequently in lines or zones parallel to the trend of some great valley or considerable mountain range. In the case of South American earthquakes, the vibrations are confined to the long narrow strip of low ground between the Andes and the Pacific Ocean and are not felt on the E. side of the mountains. Similarly the earthquakes that shake the coast lands of Venezuela and the United States of Colombia are rarely transmitted inland across the coast ranges.

The velocity of an earthquake is variable. Thus in the case of the earthquake of Lisbon in 1755, it seems to have considerably exceeded 1,000 feet per second, while in the Lisbon earthquake of 1761 the rate was three times greater. At Tokyo, in 1881, the velocities varied between 4,000 and 9,000 feet per second. The area disturbed by an earthquake is generally proportionate to the intensity of the shock. The great earthquake of Lisbon disturbed an area four times as great as the whole of Europe. In the form of tremors and pulsations it may have shaken the whole globe.

Earthquakes are not confined to the land. The larger number seem to originate under the sea, particularly along lines parallel to the shores of continents and islands that rise abruptly from great depths. In a violent submarine earthquake, the ordinary earth-wave and sound-wave are accompanied by sea-waves. These waves may be 20, 60, or even 80 feet higher than the highest tide and are usually more dreaded than the earthquake shock itself. The greatest sea-wave on record is that which, on Oct.

6, 1737, is said to have broken near Cape Lopatka, at the S. end of Kamchatka, 210 feet in height. Earthquakes are of most common occurrence in volcanic and mountainous regions.

Most earthquakes occur during the cold months or in winter, at which time barometric fluctuations are most numerous. Among memorable earthquakes may be noted that of Lisbon, Nov. 1, 1755, destroying 35,000 lives, which left the city in a heap of ruins, and was felt from the Madeiras to Great Britain; and that which destroyed Aleppo in 1822.

Within the United States only four great earthquakes are known to have occurred since the first settlement. The first was in 1755, in Massachusetts, which though very forcible, was much less so than the other three. The second, the most energetic of all, was that of New Madrid, Mo., in 1811. The third was in the Inyo Valley of California in 1868; and the fourth at Charleston in 1886. The last was felt at a distance of 1,000 miles. This earthquake gave the only opportunity that has ever occurred for obtaining good time data concerning the rate of transmission. The observations then made gave a speed of about 17,000 feet a second. The countries which have suffered most are those washed by the Mediterranean, the Andean regions, Central America, and Mexico. In Japan light or moderate earthquakes are more frequent than in any other country, 331 being recorded from 1885 to 1892. There are earthquake stations for the careful study of their phenomena in Japan, Switzerland, Greece, Italy, on the Upper Rhine, etc.

Earth Tremors, slight vibrations of portions of the earth's surface that may be noted by means of special instruments, their cause not being known.

Earthworks (in fortification), military works formed chiefly of earth and designed either as permanent or temporary defenses.

Earthworm, a well-known annelid familiar to all. It consists of many narrow rings in contact with each other.

Ear Trumpet, an instrument designed for the collection and conduction of sounds. By increasing the size of the auricle, a much larger volume of sound is gathered than by the natural ear without such aid.

EAR TRUMPETS.

Earwig, an insect which has a habit of concealing itself in cavities, endeavoring to reach their innermost recesses, and in rare cases may have sought a hiding place in the ear, but its passage into the internal ear would be stopped by the waxy secretions or the tympanic membrane. The common earwig is found throughout North America, Europe, North Africa, and Asia Minor. Earwigs shun light as far as possible and in the daytime may be found in various situations, such as beneath the bark of trees, under stones, in the soil, or in any suitable hole. They feed on fruits, seeds, leaves, and flowers, and at times on animal refuse.

Easement, in law, a right or privilege which one proprietor may have to use the land of another in connection with the needs of his own land, as the use of a roadway, a water-course, etc.

East, one of the four cardinal points, being the point in the heavens where the sun is seen to rise, or the corresponding point on the earth; that point of the horizon on the right hand when one's face is turned toward the North Pole. By the East, in an indefinite sense, is often meant Asia Minor, India, China, etc.

East Africa Protectorate, British possessions in East Africa, extending about 400 miles along the coast N. from the mouth of the Umba river. The total area is about 1,000,000 square miles, embracing a great part of Somaliland, the Equatorial Province, Uganda, Usoga, Unyoro, etc. The population is estimated at between 2,000,000 and 3,000,000. The Imperial British East Africa Company opened up the country, having in 1888 obtained a concession of territory from the Sultan of Zanzibar and a charter from the British government. An arrangement for buying them out was, however, made in 1895. The chief ports are Mombasa, the capital; Lamu, Umba, and Kismayu.

East Africa, German, German possessions in East Africa, acquired in 1885–1890, lying immediately to the S. of British East Africa, and having an estimated area of about 400,000 square miles, and estimated population of 4,000,000. Several stations have been established by the German East Africa Company, and the chief ports are Dar-es-Salaam, Bagamoyo, Kiloa, and Tanga. A narrow-gauge railway from the coast to Lakes Victoria Nyanza and Tanganyika was projected in 1899. All attempts to colonize the region with Germans have failed.

East Africa, Portuguese, possessions of Portugal, comprising the two provinces of Lorenzo Marques and Mozambique, which are separated from one another by the Zambesi. Its area is about 3,000,000 square miles; population about 300,000. The colony is administered by a royal commissioner appointed for three years.

Eastbourne, a favorite English watering place; 66 miles S. of London.

East Cape, the name of the S. E. extremity of New Guinea, in Goschen Strait, and of the most easterly headlands of Madagascar, the North Island of New Zealand, and Siberia.

Easter, the appellation given, with some small variation in several languages and dialects, to the festival kept in commemoration of our Saviour's resurrection.

Easter Island, a lonely Pacific islet discovered by Roggeveen on Easter day, 1722; visited in 1773 by Captain Cook; is 47 square miles in area; entirely volcanic, with extinct craters rising more than 1,000 feet. It is remarkable for the picturesque remains that have made the island famous. These include over 500 rude stone statues or busts, possibly portraits of famous persons, not idols, varying from 3 feet high to 70. There are besides 100 stone houses, with painted interiors and (undeciphered) incised tablets. The island has been, since 1888, a Chilean convict station.

Eastern Empire, the empire which had its metropolis at Constantinople, as distinguished from the Western one which had its capital at Rome.

Eastern Question, The, the term applied to the issues presented by political, racial and religious conditions existing in the Turkish empire, and in the regions recently severed from that empire.

Eastern Star, Order of the, a secret society composed exclusively of Freemasons in good standing, and their wives, mothers, sisters, and daughters, and the widows of Freemasons. The order originated in the city of New York in 1868, and rapidly extended over the country. A five-pointed star, between whose points the word "Fatal" is inscribed, is the badge of the order.

East India Company, in its original form "The Governor and Company of Merchants of London trading to the East Indies"; so the company is described in its charter, dated Dec. 31, 1600. Afterward, on July 22, 1702, "The United Company of Merchants trading to the East Indies." In 1749 the company plunged into the native wars of the Carnatic, and commenced a career of conquest which placed nearly the whole of India under the British rule.

The rise of such power excited in the home government a desire to reduce it under their control; and when as early as 1769 the company wished the loan of two ships of the line and some frigates, the ministry in granting their request intimated their intention of vesting in the admiral powers to treat independently on all maritime affairs. In 1773 the home government claimed that the territorial acquisitions of the company should be transferred after six years' grace to the crown, and change made in the constitution of the company, a Supreme Court of Judicature being also appointed in India. Pitt's Act (1784) established a board of control over the directors. The company's charter was renewed with a few changes in 1793; subsequently at intervals of 20 years. In 1813 they lost the monopoly of the Indian trade, retaining that of China. This last was taken away in 1833. The next renewal, that of 1853, was the last that took place. The Indian mutinies of 1857 and 1858, having discredited the company's administration, its political government was brought to an end on Aug. 13, 1858.

On Nov. 1, 1858, a proclamation announced that Queen Victoria assumed the government of India. Finally the East India Stock Redemption Act, passed on May 13, 1873, but not operative till June 1, 1874, dissolved the company itself.

East Indies, the name given to India, the Eastern Peninsula and the islands of the adjacent archipelago.

Eastlake, Sir Charles Locke, an English artist, and critic and historian of art; born in Plymouth, Nov. 17, 1793. He died in Pisa, Italy, Dec. 14, 1865.

East Main, a region of Canada, belonging to the Northwest Territories, and consisting of the greater part of the peninsula of Labrador. It is a bleak and desolate country, yielding little to commerce but fish oil and a few furs. The East Main or Slade river enters James Bay about lat. 52° 15' N., after a course estimated at 400 miles.

Eastman, Charles Rochester, an American palæontologist; born in Cedar Rapids, Ia., June 5, 1868; was graduated at Harvard University. Subsequently he served on the United States and Iowa State Geological Surveys; and took charge of the department of vertebrate palæontology in the Agassiz Museum at Harvard. In 1901 he was tried on the charge of having killed his brother-in-law, and acquitted.

Eastman, John Robie, an American astronomer; born in Andover, N. H., July 29, 1836; was graduated at Dartmouth College; became assistant in the United States Naval Observatory. In 1865 he was appointed Professor of Mathematics in the navy. He has been a member of several astronomical expeditions in the United States, and accompanied one to Sicily in 1870.

Easton, Morton William, an American philologist; born in Hartford, Conn., Aug. 18, 1841; was graduated at Yale University in 1863, and became Professor of Comparative Philology in the University of Pennsylvania.

East River, the strait between Long Island Sound and New York harbor, separating the boroughs of Manhattan and Brooklyn.

Eastwick, Edward Backhouse, an English Orientalist and diplomatist; born in Berkshire in 1814. He died in Ventnor, Isle of Wight, July 16, 1883.

Eaton, Daniel Cady, an American botanist; born in Fort Gratiot, Mich., Sept. 12, 1834; was graduated at Yale College. He accompanied the government expeditions to the Wasatch Mountains in Utah. He died in New Haven, Conn., June 29, 1895.

Eaton, Dorman Bridgman, an American lawyer; born in Hardwick, Vt., June 27, 1823; was graduated at the University of Vermont, and at the Harvard Law School; was admitted to the New York bar; and later became widely known by his advocacy of civil service reform. He died in New York city, Dec. 24, 1899.

Eaton, John, an American educator; born in Sutton, N. H., Dec. 5, 1829; was graduated at Dartmouth College in 1854; studied theology; served in the Civil War. In 1871–1886 he was commissioner of the United States Bureau of Education; in 1895 became president of Sheldon Jackson College at Salt Lake City; and in 1898 was appointed as special commissioner to arrange for the establishment of the American system of education in Porto Rico.

Eaton, William Wallace, legislator; born in Tolland, Conn., Oct. 11, 1816; received a common school education; became a lawyer; and settled in Hartford in 1850. He was a member of the United States Senate; and of the House of Representatives. He died in Hartford, Conn., Sept. 19, 1898.

Eaton, Wyatt, an American artist; born in Phillipsburg, Quebec, May 6, 1849. He settled in New

York city. He was one of the founders of the Society of American Artists. His works include portraits of Bryant, Longfellow, Emerson, Whittier, Holmes, etc. He died in Newport, R. I., June 7, 1896.

Eau de Cologne, a scent consisting of a solution of volatile oils in alcohol.

Eau de Vie, brandy; specifically the less perfectly purified varieties, the best being called cognac.

Eavesdropper, one who stands under the eaves or near the window or door of a house to listen and hear what is said within doors.

Ebbsfleet, a hamlet in the Isle of Thanet, County Kent, England; memorable as the place where the first Anglo-Saxon invaders landed.

Ebelians (named after Ebel, a Prussian archdeacon, one of the founders), a revivalist sect which arose in Konigsberg, Prussia, about 1836, the Archdeacon Ebel and Dr. Diestel being its leaders. They believed in spirtual marriage.

Ebeling, Christoph Daniel, a German scholar and historian; born in Hildesheim about 1741. His chief work is a "Geography and History of North America," for which he received a vote of thanks from Congress. He died in Hamburg, June 30, 1817.

Eberhard, Christian August Gottlob, a German poet and descriptive writer; born Belzig, Jan. 12, 1769. He died in Dresden, May 13, 1845.

Eberhard, Johann August, a German philosophical writer; born in Halberstadt, Aug. 31, 1739; died there, Jan. 6, 1809.

Ebers, Georg Moritz, a German Egyptologist and novelist; born in Berlin, March 1, 1837; was educated at Froebel's school, and studied law at Gottingen. He afterward devoted himself to the study of Egyptology, at Berlin. His visit to Egypt resulted in the discovery of the celebrated hieratic medical "Papyrus Ebers." He died near Munich, Bavaria, Aug. 8, 1898.

Ebert, Karl Egon, an Austrian poet and dramatist; born in Prague, June 5, 1801; d. Oct. 24, 1882.

Eblis, in Arabian mythology, the ruler of the evil genii or fallen angels.

Ebner-Eschenbach, Baroness Marie von, an Austrian author; born (Countess Dubsky), in Castle Zdislavic, Moravia, Sept. 13, 1830.

Ebonite, Goodyear's name for what is generally known as hard rubber. It is also called vulcanite.

Ebro, a river in Spain, which has its source in the Province of Santander, about 25 miles S. of the Bay of Biscay, and after a S. E. course of about 500 miles enters the Mediterranean. Its navigation is much interrupted by rapids and shoals, to avoid which a canal about 100 miles long has been constructed nearly parallel to its course.

Ecbatana, the chief city or ancient metropolis of Media, the summer residence of the Median, Persian and Parthian kings. It was a place of great splendor at an early period. Its site can no longer be fixed with certainty.

Ecce Homo ("Behold the man!"), a name often given to crucifixes and pictures which represent Christ bound and crowned with thorns.

Eccentric, a term in mechanics applied to contrivances for converting circular into reciprocating (backward and forward) rectilinear motion, consisting of variously-shaped disks attached to a revolving shaft not in their center. An eccentric wheel is a wheel fixed on an axis that does not pass through the center. Its action is that of a crank of the same length as the eccentricity.

Eccles, Robert G., an American chemist; born in Scotland, Jan. 1, 1848; was educated in Long Island College; became chemist in the United States Bureau of Indian Affairs; and dean in the Brooklyn College of Pharmacy.

Ecclesia (convocation), a popular assembly, especially that of Athens where the people exercised full sovereignty, and at which every citizen of 20 years of age was entitled to vote. The term was applied by the Septuagint translators to the Jewish commonwealth, and so was naturally adopted by New Testament writers to designate the Church.

Ecclesiastes, the title by which the Septuagint translators rendered the Hebrew Coheleth (the gatherer of the people), a symbolic name explained by the design of the book and the dramatic position occupied by Solomon in it, one of the canonical books of the Old Testament. According to Jewish tradition it was written by Solomon; but the best modern criticism has decided that its style and language, no less than its thought, belong to a much later date.

Ecclesiasticus, the title of a book placed by Protestants and Jews among the apocryphal writings. The author calls himself Jesus the son of Sirach.

Eccleson, Samuel, an American clergyman; born in Kent co., Md., in 1801; was educated in St. Mary's College, Baltimore, and was ordained to the priesthood of the Roman Catholic Church, 1825. He subsequently served St. Mary's College as vice-president and president; became Archbishop of Baltimore in 1834; and established the College of St. Charles in 1850; died in Georgetown, D. C., 1851.

Echegaray, Jose, a Spanish dramatist; born in Madrid in 1832. He is author of several treatises on mechanics and civil engineering, and was for a time minister of commerce and of public instruction. Since 1874 he has given himself wholly to the drama.

Echelon, the position of an army when its different positions are somewhat in the form of steps, or with one division more advanced than another, being parallel and none of them in line.

Echinus, Sea-urchin, or **Sea-egg,** a marine animal inhabiting the seas of most countries, and subject to great variety in the species. Echini are said to retreat to deep water on the approach of a storm, and preserve themselves from injury by attaching themselves to submarine bodies.

Echo, the repetition of a sound by the reflection of sound waves at some moderately even surface, as the wall of a building. The waves of sound on meeting the surface are turned back in their course according to the same laws that hold for reflection of light.

Eck, Johann Mayr von, the celebrated opponent of Luther; born in 1486. He went to Rome in 1520 and returned with a papal bull against Luther, in attempting to publish which he met with violent popular opposition. In 1530, while at the diet of Augsburg, he made the remarkable admission that he could confute the Augsburg Confession by the fathers but not by the Scriptures. He died in 1543.

Eckermann, Johann Peter, a German poet; born in Winsen, Hanover, in 1792. He has a permanent place in literature through his deeply affectionate record of "Conversations with Goethe in the Last Years of his Life"; it has been translated into nearly all the languages of Europe. Died in 1854.

Eckert, Thomas Thompson, an American telegrapher; born in St. Clairsville, O., April 23, 1825. In 1852–1859 he was superintendent of the telegraph line between Pittsburg and Chicago; was appointed superintendent of the Military Telegraph Department of the Potomac, and later general superintendent of the military telegraph of the army. In 1864–1866 he was Assistant Secretary of War; in 1875–1881 president of the American Union Telegraph Company, and in 1892 became president and general manager of the Western Union Telegraph Company.

Eckford, Henry, an American naval architect; born in Irvine, Scotland, March 12, 1775. He became a shipbuilder in New York, in 1796; designed and constructed a fleet of war vessels for the United States government in 1812–1814; built the "Robert Fulton," which made the first voyage by steam to New Orleans and Havana; became naval constructor at the Brooklyn navy-yard. He died in Constantinople, Nov. 12, 1832.

Eckhart, Meister, one of the profoundest speculative thinkers among the German mystics. Of his personal history very little is known. He was born in Strasburg or Saxony about the end of the 13th century, and died in 1327 at Cologne.

Eckmuhl, a village of Bavaria, circle of Lower Bavaria, on the Gross Leben, 13 miles S. S. E. of Ratisbon, the scene of a sanguinary battle between the French and Austrians on April 22, 1809, in which the latter were defeated.

Eckstein, Ernst, a German author; born in Giessen, Feb. 6, 1845. He is a very prolific writer, and has written many stories of ancient classic life.

Eclectic, selecting; relating to the Eclectics, philosophers of antiquity, who, without attaching themselves to any particular system, or forming one of their own, professed to select from the various existing systems what they believed to be true, and thus to construct a new and complete whole. Modern eclecticism is considered to have taken its rise in the 17th century with Bacon and Descartes; but in the 19th century it received a fresh impetus through the labors of the German philosopher Hegel, and of Victor Cousin.

Eclipse, an interception or obscuration of the light of the sun, moon or other heavenly body by the intervention of another and non-luminous heavenly body or by its shadow.

ECLIPSE.

Ecliptic, the sun's path, the great circle of the celestial sphere, in which the sun appears to describe his annual course from West to East — really corresponding to the path which the earth describes. The Greeks observed that eclipses of the sun and moon took place near this circle; whence they called it the ecliptic.

Ecole des Beaux Arts (School of Fine Arts), the French government school in Paris, founded by Mazarin in 1648, and provided with an extensive staff of teachers.

Ecole Normale Superieure (Superior Normal School), a school in Paris for the training of those teachers who have the charge of the secondary education in France.

Ecole Polytechnique (Polytechnic School), a school in Paris established with the purpose of giving instruction in matters connected with the various branches of the public service, such as mines, roads, and bridges, engineering, the army and the navy, government manufactures, etc.

Ecthyma, a pustular disease of the skin, in which the pustules often reach the size of a pea, and have a red, slightly elevated, hardish base. In the course of two or three days after the appearance of the pustule it is replaced by a scab, which adheres firmly to the base, and is somewhat concave. On its removal, a deep red mark, a new scab, an ulcer, or a healed scar remains. The disease may be acute or chronic.

Ecuador, a republic of South America, situated under the equator, whence it takes its name, between Peru and Colombia. It is of triangular shape; area, about 12,000 square miles, or including the Galapagos Islands, 122,950 square miles. Between Ecuador, Peru, and Colombia there have been for some time boundary disputes, at present unsettled. The chief towns are Quito, the capital (pop. 80,000); Riobamba (12,000) and Cuenca (25,000), all situated at a height of 9,000 feet or more above the sea. The chief port of Ecuador is Guayaquil (pop. 50,000). The most considerable rivers, the Tigre, Napo, Pastaza, etc., belong to the basin of the Amazon; and some of them, notably the Napo, are navigable for long distances. On the W. slope of the Andes the chief rivers are the Esmeraldas and the Guayaquil.

In the higher regions it is rough and cold, but in great part the elevated valleys, as that of Quito, have a delightful climate. Here the chief productions are potatoes, barley, wheat, and fruits. In the lower regions are grown all the food products of tropical climates, cacao, coffee, sugar, etc. Ecuador is comparatively poor in mammalia, though various kinds of deer as well as tapirs and peccaries are found in the forests. Parrots and humming-birds are also numerous, but perhaps the most remarkable of the birds is the condor, which dwells on the slopes of the Andes. Reptiles, including serpents, are numerous. The forests yield cinchona bark, caoutchouc, sarsaparilla, vegetable ivory, etc.

Very little has been attempted in modern times in the direction of mining industry in Ecuador. In the province of Esmeraldas hydraulic washing of gravel beds is being carried on by an American company, and quartz crushing is also in progress at Zuruma, in the province of Oro. The Indians do some washing in the beds of streams and rivers; a small supply of gold is obtained from this source. The existence of petroleum has been proved in various localities, but nothing has yet been done to develop an industry in this product. Deposits of copper, lead, iron, and coal also occur, but are not worked. In the province of Cuenca valuable lodes of silver-bearing ore are known, but are not exploited. Quicksilver is said to exist in the province of Loja. Careful prospecting of the mineral resources of Ecuador would doubtless disclose much natural wealth, but the difficulties and cost of transport have hitherto proved insurmountable obstacles to the practical development of the mining industry.

The Roman Catholic, under the constitution, is the only form of religion tolerated. The government has made education free and compulsory. Commercial and technical schools have been started at Guayaquil and Quito.

The executive government is vested in a President, elected for four years, who is assisted by a Council of State of five members. The Congress is the legislative body, and consists of two Houses, one formed of Senators, two for each province, the other of Deputies, one for every 30,000 inhabitants, both elected by universal suffrage. The Congress has extensive privileges and cannot be dissolved by the President. The seat of government is at Quito.

Ecuador at the time of the conquest of Peru by the Spaniards formed part of the great empire of the Incas. It was erected first into a viceroyalty of Peru, then (from 1564 to 1718) into an independent presidency. In 1718 it became part of the presidency of New Granada. In the revolutionary war against Spain, Ecuador, along with the neighboring territories, secured its independence in 1822, and was ultimately erected into a separate republic in 1831. Of the present population, the aboriginal red race forms more than half; the rest are negro and Indian blood, and Spanish Creoles or whites. The latter are the chief possessors of the land. Pop. 1,271,861.

Ecumenical Council, a general ecclesiastical council regarded as representing the whole Roman Catholic Church. The last was held at Rome in 1870.

Eczema, one of the commonest of all diseases of the skin, and also the most variable in its manifestations. It may be acute or extremely chronic, may affect any portion of the skin, and may occur at any age from infancy to old age.

Edda, a name given by Bishop Brynjulf Sveinsson to a volume containing the system of old Scandinavian mythology, as being the mother or source of all Scandinavian poetry. It was originally compiled by Sæmund, a Christian priest in Iceland, who died in 1133, and contained poems and chants of a mythic, prophetic, and religious character.

Eddy, Clarence, an American organist; born in Greenfield, Mass., June 23, 1851; studied with Haupt in Berlin, 1871. He made successful tours through Europe, and in 1895 removed to Paris. In 1899 he was appointed director of music at the Paris Exposition of 1900.

Eddy, Mary Baker Glover, an American reformer; born in Bow, N. H.; received a public school education, and was connected with the Congregational Church till 1866, when she discovered what are known as the principles of Christian Science. In 1867 she began to teach them, and in 1879 founded the Church of Christ (Christian Scientist) in Boston, Mass. In 1881 she was ordained to the ministry, in the same year established the Massachusetts Metaphysical College in Boston; and in 1883 started the

" Christian Science Journal." She is
the author of "Science and Health,
With Key to the Scriptures" (the
Christian Science text-book); and
numerous other works on the subject.

Eddy, Henry Turner, an Amer-
ican educator; born in Stoughton,
Mass., June 9, 1844; was graduated
at Yale College. He was Assistant
Professor of Mathematics and Civil
Engineering in Cornell University;
Professor of Mathematics, Astronomy
and Civil Engineering in the Univer-
sity of Cincinnati; president of the
Rose Polytechnic Institute, Terre
Haute, Ind., and then accepted the
hair of Engineering and Mechanics
n the University of Minnesota.

Eddy, Thomas, philanthropist;
orn in Philadelphia, Pa., Sept. 5,
758; received but little education,
eing apprenticed to a tanner when
3 years old. For the purpose of be-
oming a merchant he removed to New
ork in 1779. He was totally ignor-
nt of business and his possessions
mounted to less than $100. He failed
n 1780, and entered the insurance
usiness in 1790, in which he made a
arge fortune. With Philip Schuyler
nd Ambrose Spencer he presented a
ill for establishing a penitentiary
ystem in 1796, which was passed. In
793 he was appointed by the Society
f Friends, to visit the Indians in
ew York State; was one of the gov-
rnors of the New York Hospital;
nd was one of the founders of the
loomingdale Insane Asylum. He was
lso one of the originators of the New
ork Savings bank and the New York
ible Society, and a conspicuous pro-
oter of the Erie canal. He died in
ew York city, Sept. 16, 1827.

Eddystone, a group of gneiss
ocks, daily submerged by the tide, in
e English Channel, 9 miles off the
ornish coast, and 14 S. S. W. of Ply-
outh Breakwater. The frequent ship-
recks on these rocks led to the erec-
on of a lighthouse on them in 1669–
00; but the great storm of Nov.
, 1703, completely washed it away.
nother lighthouse was built in 1706–
09. This was burned in 1755. The
xt, noted for its strength and the
gineering skill displayed in it, was
nstructed in 1757–1759. The gran-
e was dovetailed into the solid rock,
d each block into its neighbors. As
the rock on which this tower was built became undermined and greatly weakened by the action of the waves, the foundation of another was laid on a different part of the reef in 1879. Its light is visible in clear weather at a distance of 17½ miles.

Edelweiss (German, meaning "noble white"), a composite plant inhabiting the Alps, and often growing in the most inaccessible places.

Eden, the garden of paradise.

Eden of America, a name bestowed on the island of Aquidneck, off the coast of Rhode Island, on account of its great fertility.

Edentata, an order of mammals quite or nearly destitute of teeth.

Edfu, a town of Upper Egypt; situated on the left bank of the Nile. It contains the remains of two temples, the larger of which is the best preserved monument of its kind in Egypt.

Edgeworth, Maria, an English novelist; born in Hare Hatch, Berkshire, Jan. 1, 1767. She died May 21, 1849.

Edgren, August Hjalmar, a Swedish author; born in Wermland, Sweden, in October, 1840. He came to the United States in 1860; joined the 99th New York Regiment in 1862, and in 1863 entered the engineer corps of the army. He was connected with Yale University from 1874 to 1880; Professor of Modern Languages and Sanskrit in Nebraska University from 1880 to 1884; and Professor of Romance Languages at the last institution since 1893.

Edhem Pasha, a Turkish soldier and statesman; born in 1823. He commanded the Turkish forces in the Greco-Turkish War of 1896–1897.

Edict, a proclamation or decree issued generally by royal or ecclesiastical authority; an order promulgated by a sovereign or the ruling authorities to the subjects, as a rule or law to be obeyed; an ordinance having the force of law.

Edict of Nantes, an edict by which, on April 13, 1598, Henry IV. of France granted toleration to his Protestant subjects. It was revoked on Oct. 22, 1685, by Louis XIV., the unwise act causing the expatriation of about 50,000 Protestant families, who carried their industry to England and other lands. The loss to France was great, as was the gain to those countries which were wise and hospitable enough to afford an asylum to the refugees.

EDDYSTONE LIGHTHOUSE.

Edinburgh, the metropolis of Scotland, and one of the finest as well a most ancient cities in the British empire; lies within 2 miles of the S shore of the Firth of Forth. It i picturesquely situated, being built on three eminences which run in a direction from E. to W., and surrounded on all sides by lofty hills except on the N., where the ground slopes gently toward the Firth of Forth. The central ridge, which constituted the site of the ancient city, is terminated by the castle on the W., situated on a high rock, and by Holyrood House on the E., not far from which rise the lofty elevations of Salisbury Crags, Arthur's Seat (822 feet high), and the Calton Hill overlooking the city. The valley to the N., once the North Loch, but now drained and traversed by the North British railway, leads to the New Town on the rising ground beyond, a splendid assemblage of streets, squares, and gardens. The houses here, all built of a beautiful white freestone found in the neighborhood, are comparatively modern and remarkably handsome.

The palace of Holyrood, or Holyrood House, as it is more generally called, stands at the lower or E. extremity of the street leading to the castle. No part of the present palace is older than the time of James V. (1528), while the greater portion of it dates only from the time of Charles II. In the N. W. angle of the building are the apartments which were occupied by Queen Mary, nearly in the same state in which they were left by that unfortunate princess. Adjoining the palace are the ruins of the chapel belonging to the Abbey of Holyrood, founded in 1128 by David I. The Advocates' Library, the largest library in Scotland, contains upward of 250,000 printed volumes and 2,000 MSS.

The origin of Edinburgh is uncertain. Its name is thought to be derived from Eadwinsburh, the Burh of Edwin, a powerful Northumbrian king who absorbed the Lothians in his rule. The town was made a royal burgh in the time of David I.; but it was not till the 15th century that it became the recognized capital of Scotland. Pop. (1901) 316,479.

Edinburgh, Duke of, Prince Alfred Ernest Albert, Duke of Saxony and of Saxe-Coburg-Gotha, the second son of Queen Victoria; born in Windsor Castle, Aug. 6, 1844. In 1874 he married the Grand Duchess Marie, only daughter of the Emperor of Russia. In 1882 he was made vice-admiral, and in 1893 he succeeded his uncle as Reigning Duke of Saxe-Coburg and Gotha. He died in Coburg, July 30, 1900.

Edinburgh University, the latest of the Scottish universities; was founded in 1582 by a charter granted by James VI. The government, as in the other Scottish universities, is vested in the Senatus Academicus, the university court, and the general council. The chancellor of the university is elected for life by the general council. The library of the university contains about 170,000 printed volumes, besides 2,000 manuscripts. There is also a separate theological library containing about 10,000 volumes. There are various bursaries, scholarships, and fellowships, amounting annually to about $50,000.

Edison, Thomas Alma, an American inventor; born in Milan, O., Feb. 11, 1847. In early life he was denied the privileges of continuous schooling, but being of an eager and inquiring disposition he acquired a large and varied stock of knowledge by his own industry. Before he was 12 years of age he became a train boy on the Detroit and Port Huron branch of the Grand Trunk railroad, and learned to operate the telegraph. The subject of telegraphy at once interested him, and he began to study batteries, wires and instruments, wherever he could find them. His first invention to be patented was a commercial stock indicator, and the proceeds of this invention, which at once came into wide use, enabled him to establish a laboratory at Newark, N. J., afterward removed to Menlo Park, and then to its present location at West Orange, N. J. From this beginning he became known to all the world as one of the greatest inventors of the 19th century. More than 300 patents have been issued on his inventions, and he has besides produced hundreds of minor contrivances and improvements not covered by patents. Among his more important inventions may be named the phonograph, a telephone for long distance transmission, a system of duplex telegraphy (which he subsequently developed into quadruplex and sextuplex transmission), the carbon telephone transmitter, the microtasimeter, the aerophone, megaphone, the incandescent electric lamp, the kinetoscope, and a storage battery for street railway cars and automobiles. In 1878 he was made Chevalier of the Legion of Honor by the French government, a commander of the Legion in 1889, and was the recipient of the insignia of a grand officer of the Crown of Italy bestowed the same year by King Humbert.

Edmunds, George Franklin, an American lawyer; born in Richmond, Vt., Feb. 1, 1828; received a common school education; began practising law in 1849; and two years later removed to Burlington, Vt. In 1866 he was elected to the United States Senate to fill an unexpired term, and was thrice reëlected for full terms. He was the author of the act of March 22, 1882, known as the "Edmunds Act," which provided for the suppression of polygamy in Utah and the disfranchisement of any person convicted of practising it. He was also the author of the "Anti-trust Law" of 1890. During the term of President Arthur he was president pro tempore of the Senate. In 1897 he became chairman of the Monetary Commission which had been appointed by the executive committee of the Indianapolis Monetary Conference.

Edom, in the New Testament Idumæa, in ancient times a country lying to the S. of Palestine. The Edomites are said in Genesis to be the descendants of Esau, who was also called Edom.

Edsall, Samuel Cook, clergyman; born in Dixon, Ill., March 4, 1860. After several years of successful work as a pastor in Chicago he was elected Missionary Bishop of North Dakota in 1898, and was consecrated Jan. 25, 1899.

Edson, Cyrus, an American bacteriologist; born in Albany, N. Y., Sept. 8, 1857. Dr. Edson discovered a new treatment for consumption, malaria, and other germ diseases, in 1896, which he named aseptolin. His publications include about 80 papers on medical and sanitary subjects. He is also the inventor of many surgical instruments.

Education, the art of drawing out or developing the faculties, the training of human beings for the functions for which they are destined. Education means the imparting or gaining of knowledge of every kind, good as well as evil; but specifically it signifies all that broadens a man's mind, disciplines his temper, develops his tastes, corrects his manners, and molds his habits. In a still more limited sense it means any course of training pursued by parents, teachers, or a whole community to train the young physically, mentally, and morally.

Edward the Confessor, son of Ethelred, succeeded Hardicanute in 1041. Having been reared in Normandy, he brought over many of the natives of that country, whom he preferred at his court, which gave great disgust to his Saxon subjects. Notwithstanding this, he kept possession of his throne, and framed a code which is supposed to be the origin of the common law of England. He abolished the tax of danegelt, was the first who pretended to cure the king's evil by touch, and restored Malcolm to the throne of Scotland, which had been usurped by Macbeth. He consulted William of Normandy about the choice of a successor, and this afterward furnished that prince with a plea for invading the kingdom after the death of Edward, in 1066.

Edward I. (Norman line), surnamed Longshanks; born in 1239, succeeded his father, Henry III., in 1272. At the time of his father's death he was in Palestine, fighting against the Saracens for the recovery of Jerusalem, and when he returned, completed the conquest of Wales and subdued Scotland. To preserve Wales, he caused his son, who was born in Cærnarvon, to be called the "Prince of Wales," which ever since has continued to be the title of the eldest son of the King of England. His efforts to subdue Scotland were successful, for a time, and he did not survive to witness the great defeat of the English at Bannockburn, which assured the independence of Scotland. He died in 1307.

Edward II., son of the above, was created Prince of Wales in 1284, and after his accession to the throne suffered himself to be governed by his favorites, Gaveston and the Spencers, which occasioned the barons to rise against him. In his reign the battle of Bannockburn was fought near Stirling, in Scotland, which restored to that country whatever she had lost in the previous reign, of her independence. In 1327, he was deposed by his subjects, and his crown conferred on his son, when he was confined in Berkeley Castle, Gloucestershire, where he was murdered in 1327.

Edward III., eldest son of Edward II. and Isabella of France; born in 1312, succeeded to the throne on the deposition of his father, 1327. Though a regency was appointed, the chief power was held by the queen and her paramour, Roger Mortimer, Earl of March. In 1330, Edward assumed the government, had Mortimer seized and hanged, and imprisoned Queen Isabella. In 1333 he invaded Scotland, and defeated the regent at Halidon Hill. The greater war with France soon withdrew his attention from Scotland. He assumed the title of King of France, invaded the country from Flanders, but without any successful result, renewed the invasion in 1340, when he defeated the French fleet at Sluys, besieged Tournay, and concluded a truce. The war was renewed, and another truce made in 1343, to be broken the following year. In 1346 he won the great victory of Crecy, took Calais in 1347, and concluded another truce. During his absence in France, the Scots invaded England, and were defeated at Nevil's Cross, David II. being taken prisoner. In 1356 Edward the Black Prince invaded France, and gained the victory of Poitiers, taking the French king and his son prisoners. The king was released after four years, on the conclusion of the peace of Bretigny, David of Scotland was released for a heavy ransom in 1357. War broke out again with France in 1369, and in 1373 John of Gaunt marched without resistance from Calais to Bordeaux. The long wars of Edward III., though almost fruitless of practical result, appear to have been popular; and his numerous parliaments granted liberal supplies for carrying them on, gaining in return confirmations of the Great and other charters, and many valuable concessions. His victories raised the spirit and also the fame of his country, and with the evident military power of England grew also her commerce and manufactures. In this reign Wyclif began his assault on the Church of Rome; the Order of the Garter was instituted; cannon began to be used in war; and the first English gold coin was struck. Edward died in Shene, now Richmond, June 21, 1377. By his queen Philippa, daughter of William III., Count of Holland and Hainault, he had six sons and five daughters.

Edward VII., King of the United Kingdom of Great Britain and Ireland, and Emperor of India, the Colonies, Protectorates, and Dependencies; the name and title assumed by Albert Edward, Prince of Wales, son of Victoria, queen and empress, and of Albert, Prince Consort, on his accession to the throne on the death of his mother, Jan. 22, 1901.

Edward VII. was born Nov. 9, 1841. He was in his 60th year when he came to the throne. His birth was the signal for a tremendous celebration. The queen was very popular from the beginning of her reign. The birth of her heir brought out expressions of congratulation from the poorest of her subjects as well as from the most aristocratic. He was created Prince of Wales before he was four weeks old. Soon after reaching his independence the prince made a tour of Continental Europe, with Mr. Tarver, who had been appointed his chaplain and director of studies. The queen's subjects had become much exercised meanwhile, lest the Prince of Wales should be made a dull boy by over much study. At the end of the European tour the Prince of Wales went to Edinburgh and was seriously immersed in study for several months. He went from Edinburgh to Oxford, where he attended Christ Church College. It is recorded that as an undergraduate his Royal Highness took life easily and joined freely in the social life of the university. He also matriculated at Trinity College, Cambridge.

While Prince of Wales he visited the United States with the Duke of Newcastle in 1860. He distinguished himself on this side of the ocean by the greatest good nature and tact and by his willingness to enjoy any diversion which was offered to him. On this trip the Prince of Wales visited Detroit, Chicago, St. Louis, Washington, Richmond, Philadelphia and New

York. The prince's visit to Mount Vernon was notable for the reverence which the future king manifested to the memory of George Washington. It was one of the marked incidents of the trip. A ball was given in New York in his honor, at which 3,000 guests were present. The floor of the Academy of Music, where the ball was held, caved in during the entertainment and there was some disorder. The prince also attended a literary entertainment in Boston, at which Longfellow, Holmes, Emerson, Thoreau and other Americans of distinction were presented to him.

In the autumn of 1861 the Prince of Wales met Alexandra, Princess of Schleswig-Holstein, daughter of Prince Christian, heir designate of the throne of Denmark. They were married on March 10, 1863, 10 months before Prince Christian reached the throne of Denmark. Their early married life was taken up by a series of Continental tours. Immediately after a visit to Egypt and Greece in 1870 the Prince of Wales was attacked by typhoid fever. For a long time it was believed that he could not recover, but it was announced early in 1871 that he would surely be restored to the nation. A special thanksgiving service was held in St. Paul's at which 13,000 persons were present.

In 1875 the prince visited India. There was very serious opposition to this trip, but before it was over it was demonstrated that a great deal had been accomplished in the direction of maintaining the peace of the empire, and there were celebrations of his return that nearly surpassed those which were brought about by his recovery from the typhoid fever. After the Indian visit the life of Edward was marked by his lively interest in public charities and exhibitions of whatever character, so long as they were of a sort to interest any great number of the people, and he was in no small part responsible for the success of the Colonial and Indian Exhibition of 1886.

King Edward has always been noted for the warmth of his cordiality to Americans. He has been attacked again and again by the opponents of his own reign and that of his mother for this trait.

The king is known above all things for his painstaking courtesy in small matters. There are many instances of his having stopped his carriage in the streets to apologize to one who had been endangered by his coachman's haste or carelessness. Once or twice he was the target of an assassin's bullet. The best remembered incident of the sort occurred in Brussels in 1898, when he was shot at by a half-witted youth.

Elaborate national and international preparations for the coronation ceremonies in Westminster Abbey were made for June 26, 1902; but on June 24 all festivities and ceremonies were suspended in consequence of a sudden illness requiring an immediate surgical operation. Owing to his fine natural constitution, the king fully recovered, and the coronation in a greatly modified form was accomplished August 9, the same year.

Edward, Prince of Wales, surnamed the Black Prince from the color of his armor, was the eldest son of Edward III.; was born in 1330. In 1345 he accompanied his father in his expedition to France, and displayed unusual heroism at the battle of Crecy. In 1356 he gained the battle of Poitiers, and brought the French king and his son prisoners to England. He died before his father, in 1376, leaving two sons, the elder of whom, Richard, was the successor of Edward III.

Edwards, Amelia Blandford, an English Egyptologist and writer; born in London in 1831. She died in Weston-super-Mare, Somersetshire, April 15, 1892.

Edwards, George Wharton, an American artist and author; born in Fair Haven, Conn., in 1859. Most of his stories have appeared in the "Century Magazine."

Edwards, Harry Stillwell, an American journalist; born in Macon, Ga., April 23, 1854. He is well known as a writer of dialect stories.

Edwards, Jonathan, an American theologian; born in East Windsor, Conn., Oct. 5, 1703. Jonathan entered Yale College in September, 1716, and after taking his degree in 1720, remained nearly two years at Yale, preparing for the ministry. In September, 1723, he was elected a tutor in Yale, and in the following year began to act in that capacity, but resigned the post in 1726, in order to become minister at Northampton, Mass., where he was ordained Feb. 15, 1727. His various sermons and disquisitions procured for him a wide reputation. His "Treatise on Religious Affections" was republished in England and Scotland, and won a place for him among the first writers of his sect.

After more than 23 years in Northampton he accepted a call to serve as a missionary among the Indians at Stockbridge, Mass. Here he remained six years, exerting himself with an apostolic spirit, and at the same time prosecuting the deepest investigations in mental philosophy. Here he composed his famous works on the "Freedom of the Will," and on "Original Sin." The first is his masterpiece, and worthy of the powers of Locke or Leibnitz. It was completed within the space of four months and a half. The date of its first appearance is the early part of 1754. In 1757 he was chosen president of the College of New Jersey (now Princeton University), and accepted this invitation, though not without reluctance, on account chiefly of his desire to accomplish two great literary enterprises which he had begun long before — a "History of the Work of Redemption," and a "View of the Harmony of the Old and New Testaments." In January, 1758, he went to Princeton, where he died March 22, 1758, in the 55th year of his age.

Edwards, Oliver, an American soldier; born in Springfield, Mass., Jan. 30, 1835; entered the Union army at the beginning of the Civil War, and rose, gaining almost every step by acts of personal gallantry, to the rank of Brigadier-General in 1865. His services were most conspicuous during the second day of the battle of the Wilderness; at Spottsylvania (1864), where he held the "bloody angle" for 11 hours with his own brigade, and, at the head of 20 regiments, faced the Confederates for 13 hours thereafter; and at Sailor's Creek, where he captured Generals Custis Lee and Ewell. After the war he engaged in mercantile pursuits.

Eekhoud, Georges, a Belgian novelist; born in Antwerp, May 27, 1854. His first considerable novel, "The Militia of St. Francis," is a masterly portrayal of Flemish peasant life, especially its naive mystic religiousness. In poetry he has developed from romanticism to pronounced realism.

Eel, the general name of a family of fishes. They belong to various genera. The smoothness of the body — the scales being inconspicuous — and the serpentine movements of eels are proverbial. Eels avoid cold, and frequently migrate in winter to the mud or brackish water of estuaries where the temperature is higher. They have even been met with in large numbers performing migrations on land, mostly intervening necks of soil covered with damp grass. Some eels spawn in the estuaries of rivers, and immense numbers of the young eels pass up the streams in spring. Eels are considered excellent food.

Effendi, a title of respect among the Turks, bestowed on civil officials, and on educated persons generally, in contradistinction to the military title of Aga. It is nearly equivalent to the French Monsieur, but is suffixed to the personal name.

Efflorescence, in botany, the time of flowering; the season when a plant shows its blossoms.

Egan, Maurice Francis, an American author; born in Philadelphia, May 24, 1852; Professor of English Language and Literature in the Catholic University of America in Washington, D. C.

Egbert, considered the first king of all England, was of the royal family of Wessex. On the death of Brithric he succeeded him as King of Wessex in 800, reduced the other kingdoms, and rendered them dependent on him in 827. He died in 838.

Egbert, Harry C., an American military officer; born in Pennsylvania, Jan. 3, 1839; entered the army as first lieutenant of the 12th United States Infantry in September, 1861. In October, 1898, he was commissioned Brigadier-General of volunteers. When the war with Spain broke out he commanded the 6th Infantry, of which he was lieutenant-colonel. In the Santiago campaign, while leading a charge at El Caney, July 1, 1898, he was shot through the body. For his gallantry in this action he was promoted colonel. He had scarcely recovered from his wound when he applied for service in the Philippines. He arrived at Manila with his regiment, March 4, 1899, and while storming Malinta, on the 26th, was wounded and died within an hour.

Egede, Hans, the apostle of Greenland; was born in 1686 in Norway. In 1721 he set sail for Greenland with the intention of converting the natives to Christianity, and for 15 years performed the most arduous duties as missionary, winning by his persevering kindness the confidence of the natives. In 1736 he returned to Copenhagen, where he was made a bishop and director of the Greenland missions. He died in 1758. His son, Paul Egede, born in 1708, followed in his father's footsteps, became Bishop of Greenland, and died in 1789.

Egg, a mass or speck of protoplasm developed in the females of all but the lowest animals and when impregnated with the corresponding substance of the opposite sex capable of producing organisms like the parents.

Under the term egg is included the ovum of every kind of mammal; but in general the English term egg is used only of those animals that do not produce their young alive. All animals differentiated by sex lay eggs. Those in which the egg passes out of the body and is hatched outside are called oviparous; those in which the egg remains inside the body to hatch are called ovoviviparous; those whose eggs are retained in connection with the parent by means of a placenta and an umbilical cord so that the young are brought forth alive are called viviparous. All birds lay eggs and so also do most reptiles, amphibians, and fishes; insects, crustaceans, and mollusks are oviparous. In this class are included the ornithorhynchus and echidna. The eggs of amphibians are usually found in floating glutinous masses. The eggs of fishes are popularly known as roe or spawn. Eggs vary vastly in size. The largest known egg is that of the extinct elephant bird of Madagascar, the shell of which had a capacity of about two gallons and was six times the size of the egg of the ostrich. The eggs of birds, especially of fowls and some reptiles, as turtles, are commonly used for food. Besides their use as a food hen's eggs are used in the technical arts, the albumen in which they are so rich serving in dyeing, manufacture of leather, and various other purposes. Many of the eggs of birds are beautifully colored.

Eggleston, Edward, an American author; born in Vevay, Ind., Dec. 10, 1837. In fiction he achieved celebrity with stories of life in Southern Indiana in pioneer days, while as a historian he made a specialty of American subjects. Died at Jones Lock, Lake George, N. Y., Sept. 3, 1902.

Eggleston, George Cary, an American author; brother of Edward; born in Vevay, Ind., Nov. 26, 1839. He has long been connected in an editorial capacity with one or another New York newspaper, including the "World," the "Evening Post," and the "Commercial Advertiser."

Eggplant, an herbaceous plant, from 1 foot to 18 inches high, with large white or purplish flowers. The fruit is generally dark red or purple, and when boiled, stewed, or fried in slices is used as an article of food. It is cultivated in the United States, etc., and in European hothouses. There are several species of eggplants.

Eginhard, or **Einhard,** a German historian; born in Maingau about 770. He was educated by Alcuin, and afterward became Charlemagne's private secretary and superintendent of public buildings. He married Imma — a noble lady, legendarily confounded with Emma, Charlemagne's daughter. He died in Seligenstadt, March 14, 840.

Eglantine, one of the names of the sweetbrier, a kind of wild rose. The name has sometimes been erroneously used for other species of the rose and for the honeysuckle.

Egleston, Thomas, an American mineralogist; born in New York city, Dec. 9, 1832; was graduated at Yale College in 1854, and at the School of Mines in Paris in 1860; returned to the United States in 1861; and soon afterward was appointed director of the mineralogical collection and laboratory of the Smithsonian Institution in Washington. He established the School of Mines as a department of Columbia College, New York city;

and was Professor of Mineralogy and Metallurgy there in 1864–1897. He was one of the founders of the American Institute of Mining Engineers, the American Meteorological Society and the societies of Mechanical and Electrical Engineers. He died in New York city, Jan. 15, 1900.

Egmont, Lamoral, Count, a Dutch statesman; born in 1522, of an illustrious family of Holland. He entered the military service, accompanied Charles V. in his African expeditions, and distinguished himself under Philip II. In 1567 the Duke of Alva was sent with an army to the Netherlands to reduce the insurgents. One of his first measures was to seize Count Egmont and Count Horn. After a trial before a tribunal instituted by Alva himself, they were executed at Brussels, June 5, 1568. A well-known drama of Goethe's is founded on the story of Egmont.

Egotism, the fault or practice of too frequently using the word I in writing; hence a too frequent mention of one's self in writing or conversation; self-glorification, egoism, self-conceit.

Egret, a name given to those species of white herons which have the feathers of the lower part of the back elongated and their webs disunited, reaching to the tail or beyond it at certain seasons of the year. Their forms are more graceful than those of common herons. The American egret is about 37 inches long to the end of the tail; plumage soft and blended; head not crested; wings moderate; the tail short, of 12 weak feathers.

Egypt, a slang term, supposed to be descriptive of the people or of the soil of Southern Illinois. The soil of the locality in question is of unsurpassed fertility, as was the case with that of the land of the Nile.

Egypt, a country of Northeastern Africa, forming a semi-independent portion of the Turkish dominions. It s bounded on the N. by the Mediterranean Sea, on the E. by Arabia Petræa and the Red Sea, on the S. by Nubia, and on the W. by the Libyan desert; cultivated area, 12,976 square miles; total area, 394,000. Nubia is now attached to Egypt, and the khedive or sovereign of Egypt has joint authority with Great Britain over Egyptian Sudan, which includes the Bahrel-Ghazal valley, Kordofan, and Darfur. Egypt is connected with Asia by the Isthmus of Suez, across which runs the great canal, about 100 miles long. The inhabited portion of Egypt is mainly confined to the valley and delta of the Nile, which where widest does not exceed 120 miles, while in many parts the valley is only from 10 to 15 miles wide, at the S. frontier of Egypt only two miles. The Delta is traversed by a network of primary and secondary channels, and is also intersected by numerous canals. Seven principal channels or mouths were usually recognized in ancient times.

The most remarkable phenomenon connected with the Nile is its annual regular increase, arising from the periodical rains which fall within the equatorial regions and the Abyssinian mountains. As rain rarely falls in Egypt, the prosperity of the country entirely depends on this overflowing of the river. On the subsiding of the water the land is found to be covered with a brown slimy deposit, which so enriches the soil that with a sufficiency of water it produces two crops a year, while beyond the limits of the inundation and irrigation there is no cultivation whatever. The Nile begins to rise in June, and continues to increase until about the end of September, overflowing the low lands along its course, the water being conveyed to the fields by artificial courses where natural channels fail. After remaining stationary for a short time the river rises again still further, but subsequently begins to subside, showing a markedly lower level in January, February, and March, and reaching its lowest in April, May, and early June. The overflow water is now to a great extent managed artificially by means of an extensive system of reservoirs and canals, so that after the river subsides it may be used as required. A certain proportion of the fields, after receiving the overflow and being sown, can ripen the crop without further moisture; but many others always require artificial irrigation. Steam pumps are now largely used in Northern Egypt. Latterly the government has tried to make the farmers less and less directly dependent on the inundation, and the great barrage of the Nile below Cairo, the largest weir in the world, is one means to this end, the great dam or barrage at Assouan being another.

Of the inhabitants of Egypt those of the peasant class, or Fellahs, as they are called, are undoubtedly indigenous, and may be regarded as descendants of the ancient Egyptians. They have mostly embraced Mohammedanism. The Copts are the descendants of the ancient Egyptians who embraced and still cling to the Christian religion. Though comparatively few in number (say 600,000), their education and useful talents enable them to hold a respectable position in society. The Fellahs are generally peasants and laborers; the Copts fill the posts of clerks, accountants, etc. With these aboriginal inhabitants are mingled, in various proportions, Turks, Arabs (partly Bedouins), Armenians, Berbers, negroes, and a considerable number of Europeans. The Turks hold many of the principal offices under the government. The great bulk of the people are Mohammedans, the Christians being only about 7.5 per cent. The Egyptians in the mass are quite illiterate, but under the supervision of the Ministry of Public Instruction progress is being made. In 1902 there were about 10,000 schools with 228,000 pupils. The language in general use is Arabic. The population of Egypt by the census of 1897 was 9,734,405, including 38,175 Greeks, 24,467 Italians, 19,557 British, and 14,155 French.

The government of Egypt is in the hands of the viceroy or khedive, as supreme ruler, who pays an annual tribute of £695,357 to Turkey, and is assisted by a ministry formed on the model of those of Western Europe. The capital is Cairo. At present there is a British army of occupation in Egypt, and the government is carried on under the supervision of Great Britain, the rebellion of Arabi Pasha in 1882 having been put down and the authority of the khedive restored by British troops. The financial condition of Egypt is being slowly improved under British management.

The last few years have seen wonderful discoveries in Egypt, for the tombs of the kings at Abydos have been opened and the treasures which have been found place us face to face with the beginnings of history. The oldest record of human history is the statement that 10 kings reigned at Abydos in Upper Egypt during a period of 350 years before Mena, who has usually been considered as the founder of the first dynasty. In reality these earlier kings were the real founders of the Egyptian State, and we now know not only their names, but are able to obtain some idea of their mode of life and the culture which they attained. The date which Dr. Flinders-Petrie assigns to the predynastic kings is from 4900 to 4800 B. C., and the names of the four whose tombs have been examined recently are given as Ka, Zeser, Narmer and Sam. Among the remarkable finds were a carved slate slab showing King Narmer smiting his enemy, an ebony tablet, a bar of gold, gold jewelry, including bracelets, and a royal scepter. The oldest group of jewelry in the world is undoubtedly the four bracelets of the queen of King Zer (4715 B. C.), which was discovered with a portion of the mummy in a hole in a wall. This is 2,000 years earlier than any other jewelry thus far identified. The bracelets show a wonderful perfection in the soldering of the gold. In no case can the joint be detected with a magnifying glass, either by color or a burr edge. The proof that solder was used is in the inside of the ball buttons, where a wire shank is joined in and not hammered in one piece; the wire is hammered and not drawn.

In studying the temples of Egypt we are studying the earliest monuments that exist devoted to religion and erected by what was the most civilized nation of the ancient world.

There is evidence to show that most of the religions of the ancient world were derived from a common origin, and had for their main idea either the worship of the powers of nature or as regarding nature as a theater descriptive of divine things. In Egypt it is certain from the monuments themselves and the representations on them that their early worship was derived from the phenomena of nature, and fortunately we have from Egyptian hieroglyphics a full description of what took place in each room of the temples, where staircases are provided leading up to the flat roofs, so that certain ceremonies might take place in full view of the heavenly bodies in honor of which the services are held.

When the Greeks and Romans successively conquered Egypt and made it a province of their empires no attempt was made to disturb their worship and religion, so similar in some respects to their own; in fact, the Egyptian deities were at once adopted as part of the State religion, and vast sums were spent in the restoration of the ancient temples, evidently under the direction of the Egyptian priesthood, and judging from the inscriptions with the most scrupulous conservatism of the ancient plan and purpose.

Abydos has been called the cradle of Egypt, but the seat of the first settled monarchy appears to have been the great city of Memphis, just S. of modern Cairo, and said to have been founded by Menes, the first historic king, about 4000 B. C. This city must have been one of the largest of the ancient world, and the ruins of an immense place remained as late as the 12th century A. D.; but owing to the inundations of the Nile nothing remains of it at the present day but a few earth mounds and two colossal statues, which stood in front of the great Temple of Ptah, and the Pyramids and innumerable tombs built on the uplands W. of the Nile, which formed the great cemetery of the city, and among which the famed Pyramids of Gizeh formed the chief. These are surrounded by whole streets of tombs.

It is at ancient Thebes that an idea of the magnificence of ancient Egypt can be obtained. The ruins of temples and buildings there exceed those left in the remainder of Egypt altogether, if we except the Pyramids, and are far more extensive than anything remaining either at Rome or Athens. The site of the ancient city, being mostly above the level of the inundation, has escaped the destruction that has fallen on other cities. Thebes dates from a high antiquity, and a few of the more ancient parts of its temples are from the time of the 11th dynasty, about 2500 B. C.; but under Pharaohs of the 19th dynasty (about 1400 B. C.), Seti I. and Rameses II., etc. the chief seat of government was transferred from Memphis to Thebes, and the city was embellished with the magnificent temples of which the ruins now remain. The great group of Karnac alone is nearly a mile long and one-third of a mile wide, and comprises a whole assemblage of temples connected together by avenues of sphinxes. These buildings are mostly far too complicated and elaborate to describe in the limits of a single paper. Moreover, they show in many instances a departure from the original and simple plan of the early temples dedicated to the gods; the monarchs of this period would seem to have been almost intoxicated by the grandeur of the empire and the extent of its foreign conquests and the temples are covered with inscriptions of their own glorious doings, and though the credit of them is all ascribed to the gods, the prevailing sentiment seems their own glorification.

Egyptology, the science which treats of the monuments, language, writing, literature, and history of Ancient Egypt to nearly six centuries after Christ, and of the discoveries made and in progress in that land.

Ehrenbreitstein, a Prussian fortress of great strength situated opposite the confluence of the Moselle with the Rhine, on a precipitous rock 387 feet high and inaccessible on three sides. The fortifications, erected in 1816–1826 at a cost of $6,000,000, can accommodate a garrison of 14,000 men and possess room for stores to last an army of 60,000 a year.

Eichberg, Julius, a German-American composer; born in Dusseldorf, June 13, 1824. After being professor in the Conservatoire at Geneva, he removed to New York in 1857, and in 1859 went to Boston, where he was director of the orchestra at the Boston Museum for seven years. In 1867 he established the Boston Conservatory of Music, of which he was at the head till his death, Jan. 19, 1893.

Eichendorff, Baron Joseph von, a German poet; born in the castle of Lubowitz in Silesia, March 10, 1788; was the most gifted and original romantic lyrist of Germany, and the last great one. He was a high Prussian official till 1845, when he retired. He died in Neisse Nov. 26, 1857.

Eider, a river of Prussia, which rises in Holstein, and forms the boundary between Schleswig and Holstein, falling into the North Sea at Tonning after a course of 92 miles. By its junction with the Schleswig-Holstein Canal it gives communication between the North Sea and the Baltic.

Eider Duck, a valuable swimming bird found in N. and Arctic regions, both in Europe and America. Its favorite haunts are solitary rocky shores and islands. In particular spots their nests are so abundant that a person can scarcely walk without treading on them. Their nests are usually formed of grass, dry seaweed, etc., lined with a large quantity of down, which the female plucks from her own breast. In this soft bed she lays five eggs which she covers over with a layer of down; then the natives who watch her operations take away both the eggs and the down; the duck lays a second time, and again has recourse to the feathers of her own body to protect her offspring; even this with the eggs is generally taken away; and it is said that in this extremity, her own stock being exhausted, the drake furnishes the third quantity of down; but some of the most competent authorities deny this statement. One female generally furnishes a few ounces of down. This down, from its superior warmth, lightness, and elasticity, is preferred by the luxurious to every other article for beds and coverlets; and from the great demand for it those districts of Norway, Greenland, and Iceland where these birds abound are regarded as most valuable property, and are guarded with the greatest viglance. The eggs are also highly prized.

Eiffel, Gustave, a French engineer; born in Dijon in 1832, and in 1858 was intrusted with the construction of the large iron bridge over the Garonne at Bordeaux, and was one of the first to introduce caissons worked with compressed air. In the huge framework erected for Bartholdi's "Statue of Liberty" may be seen the germ of the idea which afterward assumed the form of the colossal iron structure (1887–1889) on the Champ-de-Mars in Paris, with which his name is identified.

Eiffel Tower, The, a notable structure in Paris, France. The plans for the Paris exposition of 1889 included a monstrous iron tower, to be raised on the Champs-de-Mars, 1,000 feet high. The designer, Gustave Eiffel, constructed it of iron lattice-work, with three elevators giving access to the summit. The uses of so stupendous an undertaking are many, and it became one of the chief permanent ornaments of the city. Its importance from a meteorological point of view cannot be overestimated, the tower enabling meteorologists to study the decrease of temperature at different heights, to observe the variations of winds, and to find out the quantity of rain that falls at different heights, and the density of the clouds. Indeed, in all that relates to temperature, hygrometry, air currents and the composition of the air the tower affords opportunities for study and research, many of which have hitherto been impossible.

EIFFEL TOWER.

Eight-hour Law, an act adopted in 1868 by the United States Congress, providing that in all government employment eight hours shall constitute a day's work.

Eimeo, one of the French Society Islands, in the Pacific Ocean, about 10 miles W. N. W. of Tahiti, the principal member of the group. Area, 51 square miles; population, about 1,500. It consists of deep valleys and abrupt hills — the former well cultivated, and the latter heavily timbered. Here Christianity was first introduced in Polynesia; and here the South Sea College of the London Missionary Society was established. Most of the natives are Protestants.

Einsiedeln, a town of Switzerland, in the Canton of Schwyz, 27 miles S. E. of Zurich by rail. In Einsiedeln great numbers of prayer-books, sacred images, wax candles, rosaries, medallions, etc., are made. The town is, however, chiefly celebrated for its Benedictine abbey, to which some 200,000 pilgrims resort annually to worship at the shrine of a black image of the Virgin, Sept. 14 being the principal day in the year. The abbey itself was founded in the 10th century, and after being repeatedly destroyed by fire was rebuilt as a quadrangle in the Italian style in 1704–1719. Near the town the Austrians under Jellachich were defeated by the French under Massena on Aug. 14, 1799.

Eisenach, a town of Germany, Saxe-Weimar, 45 miles W. from Weimar. In its neighborhood is the castle of Wartburg, formerly the residence of the landgraves of Thuringia. Between 1521 and 1522 Luther passed 10 months' imprisonment in this abode, under the friendly arrest of the Elector of Saxony, and the reformer called it his "Patmos."

Eisleben, a town of Prussian Saxony, 24 miles from Merseburg. Here Martin Luther was born in 1483, and here he died in 1546. The pulpit in which he preached is still preserved in the church of St. Andrew.

Eisteddfod, a congress or session for the election of chief bards, called together for the first time at Caerwys, by virtue of a commission granted by Queen Elizabeth, May 26, 1568. Eisteddvodau have since been held in various places at uncertain intervals, but of late years have been held annually at certain places publicly notified previously. The most notable one of recent years was held in Chicago during the Columbian Exposition. Several have also been held in Pittsburg, Pa. The object is the encouragement of native poetry and music.

Ejectment, in law, the act or process of ejecting or dispossessing a tenant of his tenancy.

Ekaterinoslav, a town of Southern Russia, capital of a government of the same name, on the right bank of the Dnieper, 250 miles N. E. of Odessa. It was founded in 1787 by Prince Potemkin, and consists of a number of long, broad streets. Pop. 121,216. The government, which is intersected by the Dnieper and at one point reaches the Sea of Azov, mostly consists of steppes; area, 24,478 square miles; pop. 2,112,651.

Ekron, the northernmost of the five great cities of the Philistines, on the borders of Judah and Dan. Beelzebub was its god.

Elæagnus, oleaster, or wild olive-tree; a genus of plants, the typical one of the order Elæagnaceæ.

Elagabalus, or **Heliogabalus,** a Roman emperor; born in Emesa, in 204 A. D. His reign which lasted rather more than three years and nine months, was infamous for the nearly unparalleled debaucheries of every kind in which he indulged. He instituted ceremonies in honor of the god Elagabol, and it is believed made human sacrifices to him. He was murdered in an insurrection of the Prætorians in A. D. 222, and was succeeded by his son, Alexander Severus.

Elam, a district mentioned in Scripture, lying S. of Assyria and E. of Persia proper, apparently the same as the Susiana of Strabo. Its chief city, Susa (Shushan), early attained great importance in Mesopotamia. It appears that the primitive Semitic Elamites were overcome at an early period by a Hamitic or Cushite race from Babylon, called by the Greeks Cossæans.

Eland, the Cape elk, a large antelope about the size of a horse and of heavy make, like that of an ox, but with long, nearly straight, erect horns, It is slower in movement than most of its congeners. It is susceptible of domestication. It is found in South Africa, where its flesh is highly esteemed.

Elaterium, a drug obtained from the fruit of the squirting cucumber, a native of the S. of Europe, common on rubbish in the villages of Greece and the Archipelago.

Elba, a small island belonging to the Kingdom of Italy, in the Mediterranean Sea, off the coast of Tuscany, and with several much smaller isles, lying at the mouth of the Gulf of Piombino. The island of Elba is 18 miles from E. to W., with a width varying from 2½ to 12 miles in its widest part. The mountainous districts of the island yield large quantities of superior iron, marble, loadstones, and alum, besides wines and fruits. On the first abdication of Napoleon in 1814, Elba was assigned to him as a residence and empire. Elba was a place of celebrity in the time of the Romans, and famed then, as now, for its yield of iron.

Elbe, a river of Germany, one of the largest in Europe. It rises on the S. W. slopes of the Schneekoppe or Snowcap, one of the Riesengebirge, between Bohemia and Silesia. From this point it flows nearly due S. into Bohemia for about 50 miles, when it turns to the W., and after about 40 miles takes a general N. N. W. direction till it falls into the North Sea, intersecting Saxony, a considerable portion of Prussia, and in the latter part of its course separating Holstein on its right from Hanover on the left. The length, including windings, is upward of 780 miles. Its navigation is free to ships of all nations.

Elberfeld, a town of Rhenish Prussia. It has no historical or antiquarian importance, its prosperity, which is of recent date, being largely due to the cotton manufacture, of which it is the center of Rhenish Prussia. Pop. (1900) 156,937.

Elbing, a trading and manufacturing town of West Prussia. The town, founded in the 13th century by colonists from Lubeck and Bremen; has a church of the 14th century; a public library with over 25,000 volumes, and a number of well-endowed hospitals. Steamships and torpedo-boats are built here; and there are large iron and brass rolling-mills. Population, 41,578.

Elbow, the joint of the arm formed by the lower end of the humerus and the upper end of the radius and ulna.

Elburz, a mountain range of Persia, running for 50 miles along the S. border of the Caspian Sea. Elburz is also the name of the loftiest summit of the Caucasus.

El Caney, a fortified town of Cuba; on the main road, 4 miles N. E. of Santiago. During the Spanish-American war it was the scene of a decided American victory. At 6 A. M. on July 1, 1898, Captain Capron's battery of four guns opened fire on El Caney from an elevation about a mile and a half distant. The guns were not heavy enough to destroy the enemy's works, and at 8 o'clock General Lawton's infantry of Chaffee's brigade, consisting of the 7th, 12th, and 17th United States Infantry, assaulted and captured the hill with many prisoners. In 1901 the United States government purchased the battlefield and approaches for a public reservation.

Elchingen, a village of Bavaria, near the Danube, 5 miles N. E. of Ulm, where on Oct. 14, 1805, Ney defeated the Austrians under Laudon, winning thereby the title of Duke of Elchingen.

Elder, among Calvinistic churches, a body of men elected by the communicants from among their number to aid the minister in portions of his spiritual work. With the minister, they constitute the executive of the congregation. Among the Jews the elders are the rulers or magistrates of the people.

Elder, the common elder. It has corky bark, two to four pairs of serrate leaflets, flowers in cymes, 4 to 6 inches in diameter, very small globose, black, or rarely green. The berries are used for the manufacture of wine; the flowers for making perfumes.

Elder, Susan Blanchard, an American writer; born in Fort Jessup, La., about 1835. Her contributions to Roman Catholic publications are numerous, and her devotional poems are popular. Her dramas are meant for representation in Roman Catholic colleges.

Elder, William Henry, clergyman; born in Baltimore, Md., March 22, 1819; was educated at Mount St. Mary's College, Emmetsburg, and at the College of the Propaganda at Rome; and was ordained to the Roman Catholic priesthood in 1846. During the Civil War he gave much of his time to the care of the wounded. During the yellow fever epidemic of 1878 in Mississippi he was in constant attendance on the sick till he was stricken with the disease himself. He was appointed coadjutor archbishop of Cincinnati in 1880; presided over the Fourth Provincial Council of Cincinnati in 1882, and on the death of Archbishop Purcell, July 4, 1882, became Archbishop of Cincinnati, which place he has since held.

Eldon, John Scott, Earl of, an English jurist — lord chancellor for many years; born in Newcastle, June 4, 1751. In 1821 he was created an earl by George IV. He died in London, Jan. 13, 1838. As a lawyer he was a master of English jurisprudence; as a politician he was opposed to reform.

El Dorado, a country which Orellana, the lieutenant of Pizarro, pretended he had discovered between the rivers Orinoco and Amazon, in South America, and which he declared to be a veritable "land of gold." Sir Walter Raleigh identified it with Guiana, and published a highly-colored account of its fabulous wealth of the precious metals.

Eldridge, Shaler W., an American abolitionist; born in West Springfield, Mass., in 1817; removed to Kansas in 1855, and became proprietor of the American House in Kansas City. This hotel was soon recognized as the headquarters of Freesoilers. It was here that Governor Reeder was concealed for three weeks in 1856. Later he became a member of the National Republican Committee and agent to promote immigration into Kansas. Under the last authority he led a large number of settlers to Kansas. He was instrumental in giving much aid to the Free-State cause by smuggling large amounts of ammunition and provisions into Kansas Territory. During the Civil War he served in the Union army. He died in Lawrence, Kan., Jan. 17, 1899.

Eleazar, (help of God), the third son of Aaron, and high priest after him (Ex. vi: 23; Num. xx: 25-28). The high priesthood continued in his family through seven generations, till the time of Eli, when we find it transferred to the line of Ithamar. In the reigns of Saul and David it was restored to the line of Eleazar, and so continued till after the captivity.

Election. In theology, the word (singular) is applied to the act of God in selecting some persons from the race of man to be regenerated by His spirit; to be justified, to be sanctified, and to receive other spiritual gifts in this world, with eternal life in the next. The strongest adherents of this view are in the Presbyterian churches, though there is a tendency to soften the harsher features of the system. Many Baptists hold the same doctrine, as do the Calvinistic Methodists.

Election, in politics, the selection by voting of a person or persons to occupy some post or office.

Elector, the title of certain princes of the old German empire who had the right of electing the emperors. There were 10 in 1806, when the old empire was dissolved.

Electoral College, in the United States, the body of men elected in each State to cast the vote of the people of the State for presidential candidates. The State conventions of the various parties nominate the electors, one for each Representative, and one for each Senator in Congress. These persons are voted for on the general election day. The 12th amendment to the Federal Constitution orders the electors to meet in their respective States and vote by ballot for President and Vice-President separately. They are to make distinct lists of all persons voted for by themselves for the two offices, and send those lists, sealed, to the president of the Senate at Washington. Sections 131 to 151 of the Federal Revised Statutes prescribe generally the proceedings of the electors. They are to meet on the first Wednesday in December in the year in which they are elected, in such place as the Legislature of each State may direct. The governor is to give them three certified lists of those chosen to be electors; the electors are to make three lists of the persons balloted for by them for the presidency and vice-presidency, and to the certified lists annex the certificates furnished by the governor. They are to appoint one of their number to carry one of the certificates to the president of the Senate before the first Wednesday in January, and to send to the president of the Senate, by mail, another copy of the certificates; and the third they are to give to the judge of the district wherein they assemble.

Electoral Commission, an American commission provided for by act of Congress, Jan. 29, 1877, to settle disputed questions in regard to the electoral votes of several States in the presidential election of 1876. It was composed of 5 Senators, chosen by the Senate; 5 members of the House of Representatives, chosen by the House; and 5 Associate Justices of the Supreme Court, 4 of whom were designated by the act of Congress and the fifth selected by the 4. It was found, on counting the electoral votes in the presence of the two Houses of Congress, there were conflicting certificates from 4 States — Louisiana, Florida, Oregon, and South Carolina. These certificates were referred to the commission, which by a vote of 8 to 7 — following the line of party division in the commission — decided that the certificate of electoral votes cast for Hayes and Wheeler was the legal certificate.

The decision of the commission, according to the terms of the statute, became irrevocable; the disputed votes were counted accordingly; and Hayes and Wheeler were found duly elected by a majority of one electoral vote. The important question before the commission was whether an electoral certificate being in form confessedly according to law, it was competent for Congress or the commission to go behind the same and take evidence aliunde in support of alleged irregularities committed before such certificate was issued. The majority of the commission took the negative view.

The commission was composed as follows: Senators, George F. Edmunds, Oliver P. Morton, Frederick T. Frelinghuysen, Allan G. Thurman, and Thomas F. Bayard; Representatives, Henry B. Payne, Eppa Huntoon, Josiah Abbott, James A. Garfield, and George F. Hoar; Associate Justices of the Supreme Court, Nathan Clifford, William Strong, Samuel F. Miller, Stephen J. Field, and Joseph P. Bradley. Justice Clifford was the law president of the commission.

Electric Balance, an instrument for measuring the attractive or repulsive forces of electrified bodies.

Electric Bath, in electro-plating, the solution used for depositing metal as contained in a vat or tank. In electro-therapeutics, a bath with suitable arrangements, electrodes, and connections, for treating patients with electricity.

Electric Battery. (1) Primary or voltaic: Two dissimilar substances, or metallic surfaces, both conductors of electricity, immersed in a jar of acidulated water or other exciting fluid, that will act more energetically on one than on the other, the two conductors being connected on the outside by a wire; the substance or surface less acted upon is the negative, and that more acted upon the positive pole, the current flowing from the positive to the negative. The electrodes, or poles, are most commonly made of carbon or zinc; platinum, gold, silver, copper, iron, tin, and lead, may be, but are not used, because of cost or high resistance of the metals. The common excitants are sulphuric or nitric acid, bicarbonate of potash, sulphate of copper solution, or salammoniac solution.

(2) Secondary or storage; also called accumulator: A series of metallic or other conducting plates, usually lead, divided from each other by a non-conducting substance, the whole being immersed in a water solution; through this solution a primary current is sent from the negative to the positive, decomposing the water, its oxygen forming with the lead on the positive pole a peroxide of lead, and leaving a deposit of metallic lead on the negative plate, the oxide then being destroyed by the hydrogen. When the primary discharge from the negative to the positive pole is stopped, the chemical affinity of the oxygen in the peroxide of lead for the metallic lead causes it to leave the positive for the negative pole, thereby causing a current from the positive to the negative pole, which is utilized as a primary current.

Electric Bell. (1) Magnetic or dynamic; two electro-magnets, parallel and in series, having at their extremity a vibrating armature in close proximity pivoted between them; fixed to this armature is a clapper vibrating between two gongs. The current passes through the fields, magnetizing the cores, and in generating an alternating current vibrates the armature and rings the bell.

(2) Battery-bell: A single coil or bobbin of wire, wound around an iron core; a vibratory armature, pivoted at one end, and passing at a right angle by the core of the bobbin; at the other end of the armature is a clapper, a gong situated close to the clapper. A delicate spring is attached to the vibratory armature near the clapper, which, while the current is passing, operates against a set-screw placed for the purpose. The current passing through the bobbin to the set-screw magnetizing the core, attracts the armature which in turn is repelled, the spring working against the screw. These alternate attractions and repulsions of the armature vibrate the clapper and ring the bell.

Electric Boat, a boat propelled by electricity. The electricity drives a motor, which actuates a screw propeller. The current is generally supplied by a storage battery. From their noiselessness electric boats are peculiarly available for nocturnal torpedo operations, and the universal equipment of modern warships with electric lighting and power plants makes their use possible at all points. This type is often termed an electric launch, and most or all electric boats fall under this category.

Electric Current. When electricity is passing along a wire, or along any conductor, solid or liquid, an electric current is said to be flowing along the conductor. For example, we might speak of an electric current flowing from the prime conductor of an electric machine, along a wire connecting the prime conductor and the earth. The term is, however, confined in common language to the currents kept up by a galvanic battery, or by a thermo-electric arrangement, and to induced currents.

Electric Death, death resulting from electricity discharged through the animal system. The exact conditions requisite for fatal results have not been determined. High electromotive force is absolutely essential; a changing current, pulsatory or alternating, is most fatal. As applied to the execution of criminals, the victim is seated in a chair and strapped thereto. One electrode with wet padded surface is placed against his head or some adjacent part. Another electrode is placed against some of the lower parts, and a current from an alternating dynamo passed for 15 seconds or more. The potential difference of the electrodes is given at 1,500 to 2,000 volts, but, of course, the maximum may be two or three times the measured amount, owing to the character of the current.

Electric Drill, a drill for metals or rock worked by an electromagnetic motor.

Electric Eel, a great eel, inhabiting the marshy water of the llanos in South America. It can discharge electricity sufficient to kill an animal of considerable size.

Electric Egg, an ellipsoidal glass vessel, with metallic caps at each end, which may be filled with a feeble violet light by means of an electric machine acting on it after a vacuum has been made inside the glass.

Electricity, from the Greek elektron (amber), the name applied originally to the unknown cause of the attractions, repulsions, sparklings, etc., which attend the friction of amber and similar substances. The same cause is now recognized as giving rise, under various circumstances, to many phenomena.

Many attempts have been made to ascertain the true nature of electricity, but it cannot be said that we have yet any sure knowledge of what this subtle agent really is. Electricity behaves as if it were an incompressible fluid substance, but it differs from all known fluids in so many particulars that it may be asserted that whatever else it may be, it is not a fluid in the ordinary sense of the word. Neither is it a form of energy, though electrification as distinguished from electricity certainly is such. Many scientific men hold the view that electricity is the ether itself (the elastic, incompressible medium pervading all space and conveying luminous and other vibrations), and that the phenomena of positive and negative electrifications are due to displacement of the ether at the surfaces of bodies. The researches of Hertz, who, by direct experiment, verified James Clerk Maxwell's brilliant theory that electrical action is propagated through space by wave motion in the ether, differing only in respect of wave length and period from the vibrations which constitute light, have been of the utmost value in helping to arrive at a solution of this question. Investigations into the phenomena of electric discharges in high vacua, followed by the discovery of Roentgen of the X-rays, have also thrown great light on the subject.

The applications of electricity are extremely varied. Its employment for telegraphy and electro-metallurgy, for chemical and for medical and physiological purposes, for the production of light to illuminate streets and buildings, for driving vehicles and machinery of various kinds, may be mentioned as examples.

Electricity, Medicinal Applications of. The chief diseases in which electricity appears of service are cases of mild nervous lesions, rheumatic affections, neuralgia, etc. Electro-puncture and electro-cautery have also been successfully used in medicine, the former in the treatment of aneurism, the latter for the removal of tumors, etc.

The electric shock produced by the discharge of electricity through a living animal is a violent disturbance of the muscles. Such a shock is often powerful enough to destroy life, and in the United States electricity is used in some States in the execution of criminals. Death from lightning is simply death from an electric shock. It takes a powerful battery to give what would be called a shock on opening or closing the circuit, but a small battery connected with a Ruhmkorff's coil gives a succession of currents producing decided physiological effects. The fingers close on the handles which are at the ends of the wires from the secondary coil, and it is impossible for the victim to let them go till he is relieved by the operator.

Electric Lighting. The brilliant and dazzling light obtained by transmitting a powerful electric current between two sticks of carbon was first discovered by Sir Humphry Davy, who exhibited it in 1813 at the Royal Institution, employing for the purpose a voltaic battery of 2,000 cells.

One of the chief obstacles to the earlier introduction of the light was the cost and trouble of maintaining a sufficiently strong current by means of a voltaic battery. Faraday's discovery of magneto-electric induction furnished a new source of electricity, and machines founded on this principle were successively improved till a larger pattern, commenced by Nollet in 1850, was so far improved by Holmes in 1853 and following years, as to be adopted by the Trinity Board in 1857 for lightouse purposes. Modern dynamos consist essentially of two principal parts, viz., the electro-magnet or magnets, usually fixed, and the armature which revolves. The electro-magnet when excited by the current through its coils creates a magnetic field of intense power. The armature, a coil or collection of coils mounted on a spindle, is revolved in this magnetic field. Powerful currents of electricity are thus obtained, which are collected and directed by various devices.

When a number of electric lamps are supplied from the same source they may either be connected in series or in parallel circuit. The former term is applied when the same current goes through all the lamps in succession; the latter when the current is divided into branches, one branch going through each lamp. The series arrangement requires a device so that if one lamp be extinguished it does not put out all the others in the same circuit. In the parallel circuit arrangement, the extinction of one or more of the lamps does not affect the brightness in the rest. The Edison system of electric lighting is based on this plan. The Brush system lies at the opposite extreme and is adapted for supplying a number of arc lamps in series.

A system of distribution known as the three wire system has been found very effective in allowing the use of higher electric pressures, whereby at a slight extra cost many additional lamps can be lit from the main leads. For this purpose two dynamos coupled in series are employed, the mains consisting of two heavy leads — one from the free terminal of each dynamo — with a lighter middle wire running from the coupling of the dynamos. The lamps are arranged in parallel between each of the outer leads and the middle wire, the function of which is to render the sets of lamps on each side of it independent of each other. Should the number of lamps lit be the same on each side there is no current in the middle wire, but should there be an excess in the number on one side, then a current equal to the difference of the current in the outer leads flows along it.

It is estimated that with incandescent lamps of about 20 candle power each, the light obtained is at the rate of from 200 to 250 candles per horse power in the driving engine, and that in the largest useful size of arc lights the light is at the rate of about 2,000 candles. The incandescent light is steady, while the arc is fluttering.

Electric Machine. All dynamo-electric machines or generators are based upon discoveries of Faraday, and Henry contemporaneously in 1832, that if a closed wire or conducting ring is moved across a magnetic space, a current of electricity is generated in the wire. A dynamo-electric generator is the best apparatus devised for the application of this principle to the production of an electric current. A magnetic space is provided between the poles of two or more powerful magnets, and coils of wire are caused to traverse this magnetic space in such a way as to excite a current in them. The stronger the magnetism of the space, the longer the wire and the quicker it is moved, the stronger will be the current excited. The aim of inventors, therefore, is to construct their machines with powerful magnets and coils of wire having many turns, and to rapidly rotate these coils through the magnetic "field" by mounting them on an axle driven by a steam engine or other mechanical motor. As each coil or bobbin of wire passes between the poles of the magnet a transient current is generated in it; but as there are a number of bobbins rapidly following each other, each with its transient current, the joint effect of the whole is a practically continuous current.

Electric Motor, a machine by which electrical energy supplied from an external source is converted into mechanical energy. The general principle underlying the action of the motor is embodied in the statement, that when two separate magnetic fields are brought within the sphere of each other's action, each is distorted from its original configuration on account of a tendency for as many as possible of the lines of force to coincide in direction. Accordingly if the material source from which one field is derived be fixed, while that from which the other is derived be free to move, motion of the latter ensues as the result of the mutual stresses set up between the two fields. The motor may thus be regarded as the converse of the dynamo, and any well-constructed dynamo may be used as a motor. In general structure the two are practically identical, but modifications in certain parts are usually made in order to adapt the machine for the purpose for which it is intended. For example, a motor is liable to be subjected to sudden stresses, and in the construction of the armature care must be taken that it is rendered able to resist such stresses without running risk of damage. When a motor has been started a counter electro-motive force is produced which tends to diminish the current passing through the armature, and since a greater expenditure of energy is required to start a machine than to maintain it in motion after it has been started, this counter electro-motive force may be regarded as for many purposes furnishing a convenient automatic regulation of the current which results in the greatest supply being forthcoming at the time when it is most required. The conditions which aid in making a motor to a great extent self regulating may be attained if the resistance of the armature be very low, that of the shunt coils high, and the field developed by the field magnets much higher than that developed by the armature. It is not so easy to attain these conditions in a motor as it is in a dynamo, and it is frequently necessary to use an auxiliary coil whose effect is to weaken the field when the current in the armature is at a maximum.

Electric Repulsion, the mutual tendency of similarly electrified bodies, or similar electric charges, to repel one another.

Electric Telegraph, in a general sense an apparatus by which signals may be transmitted to considerable distances by means of voltaic currents propagated on metallic wires.

Morse is the father of the present commercial system of telegraphy. He constructed the first line over which an intelligible message was sent for any distance, the line being built from Baltimore to Washington. The first message, "What hath God wrought," was sent in 1843, by Professor Morse, to his assistant, Alfred Vail. The United States government appropriated $30,000 to further the invention.

Recently many experiments have been made to discover a successful mode of telegraphing without wires, and early in 1897 Guglielmo Marconi, a young Italian electrician, submitted to the British Postoffice Department a system of wireless telegraphy depending not on electro-magnetic, but on electro-static effects. The great difference between the earlier systems and Mr. Marconi's is that in the former a wire on each side was required, while in Marconi's vibrations are simply set up by one apparatus and received by the other. See Marconi.

Electric Torpedo, a torpedo operated by electricity. There are various kinds of electric torpedoes. The Sims-Edison torpedo is driven by an electric motor, and its motions are controlled from the shore by electricity. The torpedo proper is carried some distance below the surface of the water by a vessel immediately above it, from which it is suspended by two rigid bars. In the torpedo is a cable reel on which the conducting cable is disposed. An electric motor and controlling gear are also contained within the torpedo. In its front the explosive is placed. It is driven by a screw propeller actuated by the electric motor. As it moves it pays out cable so that it has no cable to draw after it through the water, the cable lying stationary in the water behind it. This avoids frictional resistance to its motion. The maintenance of the torpedo at a proper depth is one of the advantages of the system over other methods of propelling torpedoes through the water.

Electric Traction. The first exhibition of a practicable electric railway was made at a Berlin exhibition in 1879. The first application of electric traction to commercial work was the experimental electric railway built between Berlin and Lichterfelde in 1881. Its latent possibilities were developed in the United States, where, between 1883 and 1888, several companies were actively engaged in developing electric traction. Two systems were on trial. In the one the conductors were carried in a conduit laid between the rails, electrical connection between conductors and motors being maintained by means of a contact "plow" hung from the car which passed through a slot at the street surface, and rubbed against the positive and negative conductors, which were placed on insulated supports on either side of the conduit. In the other the current was conveyed by an overhead wire along the line, and thence brought to the car through a trolley pole supporting a wheel which pressed against the under surface of the overhead wire, the current returning to the generating station through the rails. Owing to the great initial cost of the conduit system and the imperfect electrical machinery then available, the energy of the various inventors was for many years directed to the overhead system. The first considerable installation of electric traction was made in Boston in 1889, and the successful application of electricity to traction dates from that year.

In 1890 there were in the United States approximately 2,500 miles of electrically equipped lines operating 5,500 motor cars. At present there are approximately 21,000 track miles and 68,000 motor cars in the United States.

Electrical power is now largely used in the United States to operate branches of steam railway systems, especially where the distances to be traversed are comparatively short, the stops frequent, and the traffic heavy. In Chicago and New York electricity has taken the place of steam in working the elevated railway trains which connect the business centers with the suburbs. All the new underground railways of London and Paris employ electric locomotives. Experience has demonstrated beyond doubt that in rapid acceleration of speed and quickness of stops, without increase of maximum speed, electricity vastly surpasses steam, and that by its use average speed can be greatly increased and the time between two stations greatly reduced.

Electric power is now used on a large scale for switching in freight yards and for hauling cars on sidings and in large works. It is usual to employ a flat car which can carry freight as well as act as a locomotive.

Electric Transmission of Energy, the transmission of motive power by means of an electric current. Recently there has been a tendency on the part of electrical engineers to turn their attention to the problem of utilizing heads of water for the purpose of generating electric energy to be used in furnishing light and power, not only to the towns near which they are situated, but by electric transmission to towns at a distance. At the beginning of 1897 there were 300 of these electric power plants in the United States, the most important of them being that of the Niagara Falls Power Company, at Niagara Falls, N. Y., which on Nov. 17, 1896, sent 1,000 horse power of electric energy from Niagara Falls to Buffalo, N. Y., a distance of 26 miles, where it was successfully utilized for propelling the street cars of the Buffalo Railway Company. During the electrical exhibition held in New York city in May, 1896, about one-thirtieth of a horse power was transmitted from Niagara Falls to the exposition buildings, a distance of 453 miles, where it was successfully used to operate a working model of the Niagara Falls Power Company's plant. This is the longest electric transmission of energy ever attempted.

Electrocution, capital punishment by means of electricity, as adopted in New York State; the killing of a man or of an animal by electrification.

Electrode, a term introduced by Faraday to denote the wires or other terminals by which electricity either enters or leaves a body which is undergoing electrolytic decomposition, in order to avoid an implied theory connected with the use of the older terms pole, positive pole, negative pole. He called the electrode at which the current enters, the anode, and the one at which the current leaves the kathode. These two terms have now been introduced in metallurgic practice, and the term electrode has become common in the more extended sense of the way by which electricity enters or leaves an instrument.

Electro-dynamics, that branch of electrical science which treats of the attractions and repulsions exhibited between wires or other conductors along which currents are passing. The whole science of electro-dynamics is due to Ampere, who discovered its main facts and reduced them by ingenious experiments, combined with very abstruse reasoning, to a single mathematical formula which includes them all.

Electro-magnetic Clock, a clock of which electricity is the motive power. The term is also applied to a clock the pendulum of which is designed to have an electric connection with that of another, so as to make them beat synchronously. Dr. Locke, of Cincinnati, carried out such a principle about 1860. By it all the clocks in a city may be made to keep the same time.

Electro-magnetic Engine, a machine in which the motive power is derived from electro-magnets excited by an ordinary voltaic battery, or by the more modern secondary battery. They are more commonly known as electric motors.

Electro-magnetic Force, the induction current in an electro-magnetic machine; the magnetism which it excites; the attractive force; and the lifting power which it possesses.

Electro-magnetic Telegraph, a signaling, writing, printing, or recording apparatus, in which the impulses proceed from a magnetic force developed by voltaic electricity. The principle is that a mass of soft iron is rendered temporarily magnetic by the passage of a current of electricity through a surrounding coil of wire. It differs from the electric telegraph properly considered, and also specifically from the magneto-electric telegraph. The earlier electric telegraphs were all what their name implies, and not electro-magnetic. The pioneers in its discovery were Sommering in 1808, and Professor Coxe, of Pennsylvania, about the same year. Then followed Oersted in 1820. In 1832 Professor Morse began to devote his attention to the subject of telegraphy, and in that year, while on his passage home from Europe, invented the form of telegraph since so well known as "Morse's." A short line worked on his plan was set up in 1835, though it was not until June 20, 1840, that he obtained his first patent. His first idea was to employ chemical agencies for recording the signals, but he subsequently abandoned this for an apparatus which simply marked on strips of paper the dots and dashes composing his alphabet. The paper itself is now generally dispensed with, and the signals read by sound — a practice which conduces to accuracy in transmission, as the ear is found less liable to mistake the duration and succession of sounds than the eye to read a series of marks on paper. In 1840 Wheatstone, whose attention seems to have been drawn to telegraphy about 1834, patented a dial instrument, on which, he later adopted several modifications.

Electro-magnetic Theory of Light, a theory propounded by J. Clerk Maxwell, that light is an electro-magnetic phenomenon. Though the theory has found able advocates, it has not received general acceptance among physicists. The discovery of the Roentgen rays tends to establish the correctness of the theory. Certain phosphorescent light has, like the X-rays, the power of penetrating bodies opaque to ordinary light, which seems to furnish a connecting link between ordinary light and the Roentgen rays, and the discovery by Mr. Marconi, an Italian electrician (in February, 1897), that electric vbrations can be projected through space in straight lines, and be reflected and refracted like light — indeed, made to conform to all of the manifestations characteristic of light — seems to leave little room to doubt that electricity and light have a common origin.

Electrometer, an instrument for measuring differences of electric potential between two conductors through effects of electrostatic force, and not, as in galvanometers of all varieties, through certain electro-magnetic effects of electric currents produced by them.

Electroplating, a means of covering a metal or a metallic surface by exposure in a bath of a solution of a metallic salt, which is decomposed by electrolytic action.

Electrotype, a copy, usually in copper, of a form of type. A page of the type is covered with wax, which is driven into the interstices by powerful pressure. The face of the wax mold is covered with plumbago to give it a conducting surface to which the metal will adhere. The positive pole of a battery is attached to the mold, and the negative to a copper plate, and both are plunged into a bath of sulphate of copper in solution. The copper is deposited on the face of the mold in a thin film, which increases in thickness as the process continues. The shell having attained the thickness of a stout sheet of paper, the mold is removed from the bath, the shell detached and strengthened by a backing of type-metal. This process is called backing-up. As type-metal will not readily adhere to copper, the back of the shell is coated with tin, and the shell is then placed face downward on a plate, by which it is suspended over a bath of molten type-metal. When it has attained the requisite heat, a quantity of the metal is dipped up and floated over the back of the shell. When cold, the plate is reduced to an even thickness by a planing-machine. For printing, it is mounted on a wooden backing. Another mode of obtaining electrotype plates from a letter-press form is by a mold of gutta-percha, brushed with graphite and immersed in the electro-plating bath. Gutta-percha is also used for obtaining intaglio molds and then cameo impressions from woodcuts, for printing.

Elephant, a well-known and sagacious animal, the largest of living quadrupeds. There are at least two distinct living species, the Asiatic elephant and the African; and a third species, the Sumatran, is recognized by some zoölogists. The Asiatic is readily domesticated, and is thus the best known; while the African, not now domesticated, is considerably the larger. There are also several extinct species, whose remains are met with in almost every part of the world. Few quadrupeds have attracted more attention from mankind than the elephant.

Formed, as it were, for the service of man in warm climates, it possesses every attribute that can render it useful. It is strong, active, and persevering, and so docile and sagacious as to be trained to almost any service. It is not easy to convey in words a distinct idea of the form of any animal, and this difficulty is peculiarly felt in attempting to describe the elephant, whose appearance, however, is well known. His eyes are extremely small, his ears very large and pendulous. The whole form is awkward, the head being large, the body massive, and the neck short; the legs are very clumsy and shapeless, the feet slightly divided into, or, more properly, edged with, small rounded hoofs, the tail is somewhat like that of a hog, and fringed at the extremity by a few very thick, long black hairs. The skin is thick, sparsely covered with hair, and generally of a deep ash-brown, approaching to black, though it is sometimes white or cream-colored. Elephants of this last sort (which are really albinos) are highly prized in Siam, being one of the attributes of royalty, and one of the titles of the king is "lord of the white elephant."

The tusks of the elephant are not visible in young animals, but in a more advanced stage of growth they are eminently conspicuous, and in a state of maturity they project in some instances, 7 or 8 feet, if not more. These tusks are enormously developed upper incisor teeth. The largest on record (possibly that of an extinct species) weighed 350 pounds; 60 pounds is a common weight. Elephants sometimes attain the height of 15 feet, but their general height is about 9 or 10. Their weight is sometimes enormous, being from 4,000 to 9,000 pounds. The female is gravid 20 months, and seldom produces more than one at a birth; this when first born is about 3 feet high, and continues to grow till it is 16 or 18 years of age. They are said to live to the age of 100 years and upward. They feed on vegetables, the young shoots of trees, grain, and fruit. The most singular part of the structure of the elephant is his trunk, which is peculiar to this animal, though the long and flexible snout of the tapir bears some resemblance to it. It is produced by the combination and great development of the nose and upper lip, is formed of muscular and membranous tissue, and is composed of numerous rings. It is of such strength as to be capable of breaking off large branches from trees, while at the same time, it is endowed with such exquisite sensibility that it can grasp the smallest object. The natural disposition of the elephant is gentle, and his habits social; hence they are commonly seen in herds or families, one individual of which acts as leader.

The elephant is found wild in certain localities in Hindustan, in mountainous and forest regions; in the districts lying N. E. of the peninsula and in all Southeastern Asia it is plentiful; it occurs also in Sumatra and in Borneo, but in the latter is scarce. In Africa it is widely spread, but is becoming less numerous year by year, on account of the eagerness with which it is pursued for its valuable tusks. In no one locality, probably, is the elephant so abundant as in Ceylon, especially the elevated forest regions of the island. In India elephants now form a government monopoly. The shooting of them is prohibited except when they become dangerous to man or too destructive to crops; and the right of taking them is only granted by special lease. Any person capturing, killing, or injuring an elephant renders himself liable to a considerable fine.

Elephants are employed in carrying burdens on their backs, and even with their mouths by means of a rope, the end of which they hold with their teeth. They load a boat with great rapidity and skill. In propelling wheel carriages on a declivity they push them forward with their forehead, and support them with their knees. In dragging beams of wood along the ground they remove obstacles or elevate the ends of the beams so as to clear them. Before the invention of firearms they were used in war by many nations of antiquity; they are still employed in the East in dragging or carrying artillery. The tusks of the elephant have long been applied under the denomination of ivory to a variety of important uses in the arts. From the fossil remains which have been discovered it is apparent that they must have been abundantly distributed over the earth in former times.

Elephanta, an island over 4 miles in circuit, in the harbor of Bombay, 6 miles E. of the city, and 4 miles from the mainland. It owed its European name to a large figure of an elephant which stood near its former landing-place, but which after 1814 gradually sank into a shapeless mass. Of the island's far-famed Brahmanic rock-caves, four are complete, or nearly so; the most important is the Great Temple, still used by the Hindus on Sivaite festivals. The word is also used to designate the thunder storm that marks the end of the rainy season in the region around Bombay, India.

Elephantiasis, a cutaneous disease, especially prevalent in Egypt, is so called from the enlargement of the limbs and the likeness to an elephant's hide.

Elephant Seal, the proboscis seal, or sea-elephant, the largest of the seal family. There are probably two species, one found only on the coast of California and Western Mexico, the other found in Patagonia, Kerguelen Island, Heard's Island, and other parts of the Southern Seas. They vary in length from 12 to 30 feet, and in girth at the chest from 8 to 12 feet. The proboscis of the male is about 15 inches long, but elongates under excitement. The females have no proboscis, and are considerably smaller than the male. Both species are becoming rare from their continual slaughter.

Elephant's Foot, the popular name of a plant distinguished by the shape of its root-stock, which forms a nearly hemispherical mass rising a little above the ground, covered with a thick corky bark. It has a slender climbing stem growing to a length of 30 or 40 feet, with small heart-shaped leaves and greenish-yellow flowers.

Eleusinian Mysteries, festivals held annually at Eleusis, a town of Attica, in honor of the goddess Demeter. Great secrecy was observed in their celebration. They existed about 18 centuries, and ceased during the invasion of Alaric I., in 396.

Eleuthera, one of the largest of the Bahama Islands. It is of very irregular shape, its length being about 70 miles, and its breadth in general from 2 to 4 miles, though in one part 10. Pop. over 5,000.

Elevator, a machine for transferring grain by raising it from the car, a bin, or the hold of a ship, to an elevated hopper, whence it is discharged by any one of a series of spouts directed to a bin for storage or to the hold of a boat, or to a car. Elevators are also used in many machines for raising small objects or materials. They are also used in elevating bricks, mortar, etc., in building. The word is also applied to a platform or cage in a warehouse, hotel, mine, or elsewhere, for raising or lowering persons, goods or material to or from different floors or levels.

In the grain trade an elevator is a building specially constructed for elevating, storing, and loading grain into cars or vessels. These structures are very capacious, both as to the capacity for handling and storing, but the construction is very simple. An elevator-leg, so called, reaches into the bin or cellar into which the contents of the wagons or cars are discharged. A strong belt, carrying a series of buckets, travels over a drum at the lower end and also over one at the upper end, where the buckets tip over and discharge into the upper bin. This has valved spouts, which direct the contents into either one of the deep bins. In unloading from ships, the leg is a pivoted, adjustable piece, which is first raised to obtain the necessary height, brought over the hatchway, and lowered thereinto.

Elf, a little sprite supposed to inhabit wild and desolate places, and to exercise a mysterious power over man; a fairy, a goblin.

Elgin, James Bruce, 8th Earl of, and 12th Earl of Kincardine, governor-general of India; born in 1811; educated at Eton and Christ Church; entered Parliament in 1841 as member for Southampton, and in the same year succeeded to the earldom. He was appointed governor-general of Jamaica in 1842, and in 1846 governor-general of Canada. In 1849 he was raised to the British peerage as Baron Elgin of Elgin. In 1857 he went as special ambassador to China, and was successful in concluding the Treaty of Tientsin early in 1858. In 1859 he became postmaster-general in Palmerston's cabinet, but in the following year was sent on a special mission to

Peking, and afterward appointed to succeed Canning as governor-general of India. He died in 1863 while inspecting the Himalayan passes.

Elgin Marbles, the collection of antique sculptures brought chiefly from the Parthenon of Athens to England by the 7th Earl of Elgin in 1814, and afterward purchased by Parliament for the British Museum at a cost of $175,000. They consist of figures in low and high relief and in the round, representing gods, goddesses, and heroes; the combats of the Centaurs and Lapithæ; the Panathenaic procession, etc. They exhibit Greek sculpture at its highest stage and were partly the work of Phidias.

Eli, a high-priest of Israel, and the last of the Judges, except Samuel. He preceded Samuel, about 1156 B. C. His too mild and gentle rule of the people, and his excessive indulgence toward his wicked and abandoned sons are powerfully recorded in I Samuel iv., xiv., and xxii. After a turbulent reign of 40 years, he died 1116 B. C.

Elias, Ney, an English explorer; went to China early in life and engaged in business there. In 1871 he made an overland journey across Asia. Passed through Siberia in the depth of winter and reached St. Petersburg. Later he traveled the entire length of the Pamirs and Badkshan and Afghan Turkestan. He died in London, May 31, 1897.

Elias, Saint, a lofty mountain on the N. W. coast of America. It rises about 18,000 feet above the sea, being visible to mariners at a distance of 50 leagues. Physically it marks pretty nearly the point where the shore, after trending in a N. W. direction, turns due W.; politically it divides itself between the Territory of Alaska and the Dominion of Canada.

Elie de Beaumont, Jean Baptiste Armand Louis Leonce, a French geologist; born in Canon, France, 1798. He died in 1874.

Elijah, the most distinguished of the prophets of Israel, flourished in the 9th century B. C., during the reigns of Ahab and Ahaziah, and until the beginning of the reign of Jehoram, his special function being to denounce vengeance on the kings of Israel for their apostasy. He incurred the anger of Jezebel, wife of Ahab, for slaying the prophets of Baal, but escaped to Horeb, afterward returning to Samaria to denounce Ahab for the murder of Naboth. Elijah at length ascended to heaven in a chariot of fire, Elisha, his successor, being witness. See I Kings xvii. to xxi. and II Kings i. and ii.

Eliot, Charles William, president of Harvard University; born in Boston, Mass., March 20, 1834; became president in 1869. He has published "Manual of Qualitative Chemical Analysis"; "Manual of Inorganic Chemistry" (with Storer); etc. He is a constant writer on education and other prominent questions of the day.

Eliot, George, the assumed literary name of Mary Ann, or, as she preferred to write the name in later years, Marian Evans, an English novelist; born near Nuneaton Nov. 22, 1820. Her first literary undertaking was the continuation of a translation of Strauss's "Life of Jesus," commenced by her friend Mrs. Hennell, and completed by Miss Evans in 1846. In 1849 she went abroad, returning to England next year, and in 1851 she took up her abode as a boarder in the house of John Chapman, editor of the "Westminster Review." It was not, however, till January, 1857, that she came prominently into public notice, when the first of a series of tales entitled "Scenes from Clerical Life" appeared in "Blackwood's Magazine." These tales immediately arrested attention, and obtained the praise of the editor who was informed that he was to know the author as George Eliot. John Blackwood was as ignorant of the author's identity for a considerable time as was all the world except George H. Lewes and one or two others. The "Scenes" came to an end in November, 1857, and in the February following the first chapters of "Adam Bede" were in the publisher's hands, the whole work being completed and sent in by October.

The success which attended the publication of this powerful story of English rural life was unmistakable, and public curiosity was greatly excited as to the personality of the author. The credit of authorship was openly ascribed to various persons of more or less note and was claimed by others of more or less modesty and honesty. The secret soon began to leak out. Months before her second novel, "The Mill on the Floss," was published (1860), it was well known, among literary circles at least, that George Eliot was none other than Marian Evans, the Westminster reviewer. By this time was established that close association and literary fellowship with the talented philosophical writer, George H. Lewes, which terminated only with the death of the latter but a little more than two years before her own. In May, 1880, she married John Cross, but died rather suddenly at Chelsea on Dec. 22 of that year. Her life was published by her husband in 1885.

Eliot, Samuel, an American educator and historian; born in Boston, Mass., Dec. 22, 1821. He filled the chair of history and political science in Trinity College, Hartford, Conn. (1856–1864); was president of Trinity College (1860–1864); and overseer of Harvard (1866–1872). He died in Beverly, Mass., Sept. 14, 1898.

Elisha, a Hebrew prophet, the disciple and successor of Elijah. Many miracles of prediction and cure, and even of raising the dead, are ascribed to him, but his figure is less original and heroic than that of his master. He held the office of prophet for fully 65 years, from the reign of Ahab to that of Joash (latter half of 9th century B. C.).

Elixir, a word of Arabic origin, applied by the alchemists to a number of solutions employed in attempting the transmutation of metals into gold, and also to a potion, the elixir of life, supposed to confer immortality. It is still used for various popular remedies, for the most part composed of various aromatic and stimulative substances held in solution by alcohol.

Elizabeth, a city and county-seat of Union co., N. J. It was settled as Elizabethtown in 1665, and was the capital of New Jersey from 1755 to 1757. It contains an old tavern where Washington stopped on his way to New York for his first inauguration. Gen. Winfield Scott's home, the Boudinot House, and the old Livingston Mansion. Pop. (1890) 37,764; (1900) 52,130.

Elizabeth, Empress of Austria; born in Possenhofen, Bavaria, Dec. 24, 1837; daughter of Duke Maximilian Josef of Bavaria; married her cousin, the Emperor Franz Josef on April 24, 1854. Together they were crowned with the insignia of St. Stephen when the inauguration of the dual system was solemnized. She was greatly admired by Austrians and Hungarians alike. On Sept. 10, 1898, while visiting Geneva, Switzerland, she was instantly killed by an Italian anarchist.

Elizabeth, Queen of England; the daughter of Henry VIII. and of Anne Boleyn; born in Greenwich Sept. 7, 1553, and almost immediately declared heiress to the crown. After her mother had been beheaded (1536) both she and her sister Mary were declared bastards (28 Henry VIII. cap. vii.); finally she was placed after Prince Edward and the Lady Mary in the order of succession (35 Henry VIII. cap. i.). Thus, while the first two marriages of King Henry were both still held to be illegal, the children of both were legitimatized. Upon the death of Mary, November 17, 1558, Elizabeth ascended the throne. She restored, or may be said to have established the Protestant religion, assisted projects for English colonization of America, repulsed the Spanish Armada, encouraged literature and made England respected abroad. Personally she had serious faults, and her execution of Mary, Queen of Scots, is a blot on her name, but her reign was an oasis of glory compared with the rule of the sovereigns who immediately preceded her, and those who followed her up to William and Mary. She died March 24, 1603.

Elizabeth, Queen of Bohemia; born in Scotland, Aug. 19, 1596. She forms the connecting link between the ancient royal families of England and Scotland and the present reigning dynasty. Daughter of James VI. of Scotland and I. of England, she married in 1613 Frederick V., Elector Palatine, who in 1619 was chosen King of Bohemia. Through her daughter Sophia, Electress of Hanover, she became the grandmother of George I. of Great Britain. She died in England, Feb. 13, 1662.

Elizabeth, the wife of Zacharias and mother of John the Baptist. An angel foretold to her husband the birth of a son to her old age; and it was also foretold by the angel Gabriel to the Virgin Mary, as an assurance of the birth of the Messiah.

Elizabethan Architecture, a style of architecture which prevailed in England during the reigns of Elizabeth and James I.

Elizabeth Islands, a group of 16 American islands S. of Cape Cod, with a permanent population of about 100.

Elizabeth, Madame (Philippine Marie Helene Elizabeth), sister of Louis XVI.; born in 1764. She was the faithful friend and companion of the royal family in their flight to Varennes, and during their imprisonment she was executed, on the pretense of corresponding with her other brothers, afterward Louis XVIII. and Charles X., May 10, 1794.

Elk, Moose, or **Moose Deer,** the largest of the deer family, a native of Northern Europe, Asia, and America. The American form (to which the name moose is usually given), is sometimes separated from the European, but most naturalists find no specific difference between them. The elk or moose has a short, compact body, standing about 6 feet in height at the shoulders, a thick neck, large, clumsy head, and horns which flatten out almost from the base into a broad, palmate form with numerous snags. In color the elk is grayish brown, the limbs, sides of head, and coarse mane being, however, of a lighter hue. Their flesh resembles beef rather than venison. For the most part they are inoffensive, and so exceedingly wary that they are approached only with difficulty. In America the Indians and half-breeds are the most skillful moose-hunters. The moose has a wide range in Canada, extending from the Arctic Ocean, and British Columbia, to New Brunswick and Nova Scotia; it is found also in Maine. It feeds largely on the shoots of trees or shrubs, such as the willow and maple, and on bark, etc. In Sweden its destruction is illegal, and in Norway there are many restrictions.

Elk, Irish, a large deer found in the Pleistocene strata, and distinguished by its enormous antlers, the tips of which are sometimes 11 feet apart. Though a true deer, its antlers differ from those of living species in that the beam is flattened into a palm. To sustain the great weight, unusually large and strong limbs and neck vertebræ were required. Its remains are found in Ireland, in Scotland, in England, and on the Continent, where they occur in lacustrine deposits, brick-clay, and ossiferous caves.

Elkin, William Lewis, an American astronomer; born in New Orleans, April 29, 1855. He was educated at the Royal Polytechnic School in Stuttgart, Germany, and graduated in 1880 at the University of Strasburg. He then went to the Cape of Good Hope on the invitation of Dr. Gill, British astronomer there, and took part with him in observations with the heliometer for the determination of stellar parallax, these determinations being the most accurate of the kind ever made up to that time. He became astronomer at the Yale College observatory in 1884, where he continued his excellent work in stellar parallax.

Elkins, Stephen Benton, an American statesman; born in Perry co., O., Sept. 26, 1841; removed to Missouri when a child; was graduated at the University of Missouri in 1860; and admitted to the bar in 1863. During the latter year he moved to New Mexico, where he was a member of the Territorial Legislature in 1864–1865; and the Territorial Delegate in Congress in 1873–1877. Subsequently he removed to West Virginia, and became interested in railroads and coal mining. In 1891–1893 he was Secretary of War, and in 1894 was elected to the United States Senate, being re-elected in 1900.

Elks, Benevolent and Protective Order of, a convivial, charitable, and benevolent organization founded by members of the theatrical profession in New York city in 1868, but now admitting to membership men in other professions and occupations. Though not a beneficial order, it is claimed that it expends more in unostentatious charity than any other organization in the world. Its returns for 1900 showed a total membership of 75,000.

Ellenborough, Edward Law, Lord, an English lawyer, Lord Chief-Justice of the King's Bench; born in

1750 in Great Salkeld, Cumberland. He was educated at the Charter House and at Cambridge, and called to the bar in 1780. At the trial of Warren Hastings, in 1785, he acted as leading counsel. The defense did not come on till the fifth year of the trial, but after eight years Hastings was acquitted and Law's success assured. In 1801 he was made attorney-general, and in 1802 became Lord Chief-Justice of the King's Bench, and was created baron. He held the office of chief-justice for 15 years, resigning in 1818, in which year he died.

Ellery, William, an American patriot; born in Newport, R. I., Dec. 22, 1727; sat in the Congress of 1776, and was one of the signers of the Declaration of Independence. From 1790 till his death, Feb. 15, 1820, he retained the office of collector in his native place.

Ellet, Elizabeth Fries, an American prose-writer; born in Sodus Point, N. Y., in 1818. She died June 3, 1877.

Ell, a measure originally taken in some vague way from the arm, and which has been used to denote very different lengths. The English ell, as a measure of cloth, is equal to 1¼ yard, the Flemish to ¾ yard, and the French to 1½ yard.

Ellicott, Charles John, an English clergyman; born in 1819. He was educated at Cambridge. After being Professor of Divinity in King's College, London, Hulsean lecturer and Hulsean Professor of Divinity at Cambridge, and dean of Exeter, he was appointed Bishop of Gloucester and Bristol in 1863. He was for 11 years chairman of the scholars engaged on the revision of the New Testament translation, and published commentaries on the Old and New Testaments, as well as numerous sermons, addresses, lectures, etc.

Ellicott, Henry J., an American sculptor; born near Ellicott City, Md., in 1848; was educated at Washington, D. C., and at the Academy of Design in New York. His best known works include bronze statues for the 1st and 2d Pennsylvania Volunteers on the battlefield at Gettysburg, the equestrian statues of General Hancock in Washington and General McClellan in Philadelphia; and memorial monuments in various parts of the United States. He died in Washington, D. C., Feb. 12, 1901.

Ellinwood, Frank Fields, an American clergyman and author; born in Clinton, N. Y., June 20, 1826. He graduated at Hamilton College in 1849; was ordained a minister in the Presbyterian Church in 1853; and became secretary of foreign missions for that denomination in 1871. His chief works are: "The Great Conquest" (1876); "Oriental Religions and Christianity" (1892).

Elliot, Daniel Giraud, an American zoölogist; born in New York, March 7, 1835; received an academic education; made zoölogy a special study from his youth; traveled in Europe, Africa, and parts of Asia in 1856–1878; subsequently in Canada, Alaska, South America, and the greater part of the United States. He afterward became curator of zoölogy in the Field Columbian Museum. He was decorated 10 times by various European governments for his researches in natural science.

Elliott, Henry Rutherford, an American journalist and story-writer; born in 1849.

Elliott, Charles Wyllys, an American novelist and historian; born in Guilford, Conn., May 27, 1817. Settling in New York, he was one of the founders and trustees of the Children's Aid Society in 1853, and in 1857 was one of the commissioners for laying out Central Park. He wrote a number of valuable works. He died Aug. 23, 1883.

Elliott, Charlotte, an English hymn-writer; born March 17, 1789. Her sacred songs were exceedingly popular, "Just as I Am" (1834), being universally adopted. She died in Brighton, Sept. 22, 1871.

Elliott, Ebenezer, an English popular poet; born in Masborough, near Sheffield, March 17, 1781. At first a foundry hand, his poetic gift was used in denouncing the exploitation of the proletariat by a capitalistic oligarchy; yet the bitterness and exaggerated rhetoric one would expect are wholly absent from "Corn Law Rhymes" (1831), and "More Prose and Verse" (1850). He died in Great Houghton, near Barnsley, Dec. 1, 1849.

Elliott, Henry Wood, an American naturalist and artist; born in Cleveland, O., Nov. 13, 1846; received a public school education. In 1862-1878 he was private secretary to Joseph Henry, secretary of the Smithsonian Institution; in 1869-1871 was artist of the United States Geological Survey; and in 1872-1874 and 1890 was a special commissioner for the investigation of the Seal Islands of Alaska.

Elliott, Maud (Howe), an American novelist, daughter of Julia Ward Howe; born in Boston, Mass., Nov. 9, 1855.

Elliott, Sarah Barnwell, an American novelist, granddaughter of Stephen Elliott of South Carolina.

Elliott, William, a miscellaneous writer; born in Beaufort, N. C., April 27, 1788. He was educated at Yale, and devoted himself mainly to agriculture and rural sports. His contributions to the "Southern Review" were numerous. He died in Beaufort, February, 1863.

Ellipse, a plane curve of such a form that, if from any point in it two straight lines be drawn to two given fixed points, the sum of these straight lines will always be the same; a geometrical term used in conic sections. These two fixed points are called the foci.

Ellipsis, a term used in grammar and rhetoric to signify the omission of a word necessary to complete the expression or sentence in its usual form. The object of ellipsis is shortness and impressiveness; accordingly it prevails in proverbs. Ellipses are used in all languages, but the same form of ellipses is not common to all.

Ellis, Edward Sylvester, an American writer of school text-books and juvenile literature; born in Geneva, O., April 11, 1840. For some years was instructor at Trenton, N. J.

Ellis, George Edward, an American clergyman, biographer, and historical writer; born in Boston, Mass., Aug. 8, 1814. He was pastor of the Harvard (Unitarian) Church, Charlestown, Mass. (1840-1869); and held the Professorship of Systematic Theology in the Cambridge Divinity School (1857-1863). As president of the Massachusetts Historical Society he made valuable contributions to early colonial history. He died in Boston, Dec. 20, 1894.

Ellis, William, an English missionary; born in 1794. He was sent out to the South Sea Islands in 1816 by the London Missionary Society, and returned in 1825, one result of his labors being "Polynesian Researches" (1829). In 1830-1844 he was secretary of the society and afterward on its behalf made several visits to Madagascar, the longest being in 1861-1865. He died in 1872. His wife, Sarah Stickney Ellis, also a popular writer, was born in London in 1812. She died in Hoddesdon, Herts, June 16, 1872.

Ellora, Elora, or **Eluru,** a village in Hindustan, Province of Aurungabad; celebrated for some remarkable cave temples, excavated in the solid rock, which in magnitude and perfection surpass all other constructions of the kind in India.

Ells, Robert Wheelock, a Canadian geologist; born in Cornwallis, N. S., July 26, 1845; was graduated at McGill University in 1872, and in May of that year joined the staff of the Canadian Geological Survey, of which he later became senior geologist. He was a fellow of the Royal Society of Canada and also of the American Geographical Society. In 1895 he was elected president of the Ottawa Literary and Scientific Society. He was the author of numerous reports on geology and mineral researches, published in the annual volumes of the Canadian Geographical Survey since 1872.

Ellsworth, Ephraim Elmer, an American military officer; born in Mechanicsville, N. Y., April 23, 1837. He removed to Chicago before he was of age, and studied law. He organized about 1859 a zouave corps which became noted for the excellence of its discipline. In March, 1861, he accompanied President Lincoln to Washington, and in April he went to New York city, where he organized a zouave regiment of firemen, of which he became colonel. Ordered to Alexandria, he lowered a Confederate flag floating over a hotel, for which act the hotelkeeper fatally shot him, May 24, 1861.

Ellsworth, Oliver, an American jurist; born in Windsor, Conn., April

29, 1745. He was educated at Yale and Princeton, graduating from the latter in 1766; admitted to the bar in 1711; sent as delegate from Connecticut to the first Continental Congress; made judge of the Connecticut Superior Court in 1784. He was a member of the convention that framed the Federal Constitution, and influential in organizing Congress and the judiciary. In 1796 he was appointed chief-justice, and in 1799 made member of a diplomatic commission to France, with Patrick Henry and William R. Davie. On account of ill health he sent home his resignation as chief justice, but in 1807 was reappointed. He died in Windsor, Conn., Nov. 26, 1807.

Elm. The species of elm (Ulmus), the type of the natural order Ulmaceæ, are trees or shrubs, with alternate serrated and simple leaves, and fascicles of small, inconspicuous flowers which appear before the foliage. There are several varieties, the most ornamental and picturesque of which is the weeping elm, of which there are also several varieties. The American or white elm is found from the 49th to the 30th parallel of latitude, is abundant in the Western States, and extends beyond the Mississippi but attains its loftiest stature between lat. 42° and 46°; here it reaches the height of 100 feet, with a trunk 4 or 5 feet in diameter, rising sometimes 60 or 70 feet, when it separates into a few primary limbs which are at first approximate, or cross each other, but gradually diverge, diffusing on all sides long, arched, pendulous branches, which float in the air. It has been pronounced by Michaux the most magnificent tree of the temperate zone. The red or slippery elm is found over a great extent of country in North America as far S. as lat. 31°; it attains the height of 50 or 60 feet, with a trunk 15 or 20 inches in diameter; the wood is stronger and of a better quality than that of the white elm. The leaves and bark yield an abundant mucilage, to which it owes one of its names, and which is used as a remedy in coughs, and in dysentery and other bowel complaints. The wahoo inhabits from lat. 37° to Florida, Louisiana, and Arkansas, and is a small tree, sometimes 30 feet high, remarkable from the branches being furnished on two opposite sides, with wings of cork ⅛ to ¼ inches wide.

Elms, City of, a popular name given to New Haven, Conn.

Elmer, Horace, an American naval officer; born in Bridgeton, N. J., in 1847; entered the navy as acting midshipman in September, 1861; was promoted midshipman in July, 1862; ensign in November, 1866; master in December, 1866; lieutenant in March, 1868; lieutenant-commander, in April, 1869; and commander in March, 1885. During the winter of 1897–1898 he superintended the construction of naval vessels at Cramp's shipyard in Philadelphia. When it became evident that war with Spain would break out, he was ordered to organize the naval force afterward known as the "mosquito fleet" for coast patrol duty. He died in Brooklyn, N. Y., April 27, 1898.

Elmira College, an educational institution in Elmira, N. Y., for women; founded in 1855 under the auspices of the Presbyterian Church.

Elmo's Fire, Elmo's Light, or **St. Elmo's Fire,** a fire or light, probably of electric origin, which in certain states of the atmosphere settles on the tops of masts, the extremities of yards, on the rigging, etc., in ships navigating the Mediterranean.

Elocution, the art of correct speaking or reading in public, including the appropriate use of gestures.

Elohim, the ordinary name of God in the Hebrew Scriptures. There is the grammatical anomaly that this plural stands as the nominative to a singular verb. This has been held to imply that in the Divine nature there is a certain plurality and a certain unity. The plural has been called also the plural of majesty. It is generally used of the true God, but Jehovah is deemed by far the more sacred name.

Elohist, a Biblical writer, hypothetically assumed to have written part of the Pentateuch, who habitually, if not exclusively, used the Hebrew name Elohim for God.

Elopement, the act of eloping; private or unlicensed departure from the place or station to which one is assigned by duty or law, particularly of a wife from her husband, or of a daughter or ward with a gallant. In almost every one of the States, the male principal in an elopement is held guilty of an abduction provided his associate in the act is under age.

Elphinstone, Mountstuart, an Indian administrator, son of the 11th Lord Elphinstone; born in Scotland, in 1778. He joined the Bengal civil service in 1795; was ambassador to the Afghan court in 1808; resident at the court of Poonah from 1810 to 1817; and British commissioner to that province from 1817 to 1819, when he became governor of Bombay. During a government of seven years he established a code of laws, lightened taxes, and paid great attention to schools and public institutions. He resigned in 1827. A college established by the natives was called after him Elphinstone College. He was the author of an "Account of the Kingdom of Cabul and its Dependencies" (1815), and a "History of India" (1841). He was offered the governor-generalship of India in 1835, and afterward that of Canada, both of which he declined. He died in 1859.

Elsinore, a seaport of Denmark on the island of Seeland, at the narrowest part of the Sound (here only 3½ miles broad), 24 miles N. by E. of Copenhagen, and opposite Helsingborg in Sweden. Saxo Grammaticus, a famous writer of the 12th century, was born in Elsinore, and here too Shakespeare lays the scene of "Hamlet." Elsinore was raised to the rank of a town in 1416; it was several times destroyed by the Hanseatic League, and in 1658 was taken by the Swedes, but it was restored to Denmark two years later.

Elssler, Fanny, a celebrated dancer; born in Vienna, June 23, 1810. She was the daughter of Johann Elssler, Haydn's factotum, and was educated at Naples for the ballet. Fanny helped to raise money for the Bunker Hill Monument. She died in Vienna, Nov. 27, 1884.

Elswick, a township on the W. outskirts of Newcastle, England. Here are located the gun-founding works of the firm of Sir W. G. Armstrong, Mitchell & Co., which are among the largest of the kind in Europe. The frontage toward the river is about one mile, the entire area occupied is about 125 acres, and in busy times about 14,000 work-people are employed. Elswick Park, including Elswick Hall, was opened as a recreation ground in 1878. Population 53,266.

Elvas, the strongest fortified city of Portugal, in the Province of Alemtejo, near the Spanish frontier; 10 miles W. of Badajoz. Standing on a hill, it is defended by seven large bastions and two isolated forts.

Elwell, Frank Edwin, an American sculptor; born in Concord, Mass., June 15, 1858; received a public school education; studied sculpture at the Ecole des Beaux Arts, Paris. He was the first American sculptor to model a statue in the United States for a European country. He received a medal at the World's Columbian Exposition; two gold medals from the Art Club of Philadelphia; and a medal from the King of Belgium.

Elwell, James William, an American philanthropist; born in Bath, Me., Aug. 27, 1820; received an academical education; became a partner in his father's commission house in New York in 1838; and after the death of his father he founded the firm of James W. Elwell & Co. in 1852. The firm owned three lines of vessels to the principal European, Southern, West Indian and South American ports. His philanthropic gifts aggregated $3,000,000, and he bequeathed $25,000 to his favorite charities. He originated the Helping Hand Society and was one of the founders of the Brooklyn Orphan Asylum. He was also identified as trustee or director with many other charitable institutions. He died in Brooklyn borough, Sept. 2, 1899.

Elysium, or **Elysian Fields,** the name of a fabulous region which the ancients supposed to be the residence of the blessed after death. Elysium is supposed by Homer to have been at the extremities of the earth; other poets placed it in the Fortunate Islands (the Canaries). It had a serene and cloudless sky, while a soft celestial light shed a magical brilliancy over every object. The favored heroes here lived happily under the rule of the just Rhadamanthus and exercised themselves in wrestling and other contests, danced to the sound of the lyre from which Orpheus drew enchanting tones, or wandered through groves, on the smiling banks of the Eridanus. The description of the gardens of Armida, in Tasso's "Jerusalem Delivered," is an imitation of the ancient ideas of the Elysian fields.

Emancipation, the act by which in the Roman law, the paternal authority was dissolved in the lifetime of the father. It took place in the form of a sale by the father of the son to a third party, who manumitted him. The Twelve Tables, the foundation of Roman law, required that this ceremony should be gone through three times. In general, the son was at last re-sold to the father, who manumitted him, and thus acquired the rights of a patron which would otherwise have belonged to the alien purchaser who finally manumitted him. In the case of daughters and grandchildren one sale was sufficient.

Emancipation Proclamation, a proclamation providing for the emancipation of the slaves in certain parts of the Confederate States issued as a war measure by President Lincoln, Jan. 1, 1863. The number of slaves emancipated by this proclamation was, taking the census of 1860 as a basis, as follows:

Alabama	435,080
Arkansas	111,115
Florida	61,745
Georgia	462,198
Louisiana	247,715
Mississippi	436,631
North Carolina	331,059
South Carolina	402,046
Texas	182,566
Virginia	450,000
Total	3,120,515

The number of slaves not affected by its provisions was about 832,000. The full text of the proclamation is as follows:

"Whereas, on the twenty-second day of September, one thousand eight hundred and sixty-two, a proclamation was issued by the President of the United States, containing, among other things, the following, to-wit:

That, on the first day of January, in the year of our Lord one thousand eight hundred and sixty-three, all persons held as slaves within any State, or designated part of State, the people whereof shall be in rebellion against the United States, shall be then, thenceforth and forever free, and the Executive Government of the United States, including the military and naval officers thereof, will recognize and maintain the freedom of such persons, and will do no act or acts to repress such persons, or any of them, in any efforts they may make for their actual freedom.

That the Executive will, on the first day of January aforesaid, by proclamation, designate the States and parts of States, if any, in which the people thereof shall be in rebellion against the United States, and the fact that any State, or the people thereof, shall, on that day, be, in good faith, represented in the Congress of the United States by members chosen thereto at elections wherein a majority of the qualified voters of such State shall have participated, shall, in the absence of strong countervailing testimony be deemed conclusive evidence that such State and the people thereof are not then in rebellion against the United States.

Now, therefore, I, Abraham Lincoln, President of the United States, by virtue of the power in me vested as Commander-in-chief of the Army and Navy of the United States in time of actual armed rebellion against the authority and Government of the United States, and as a fit and necessary war measure for suppressing said rebellion, do on this first day of January, in the year of our Lord one thousand eight hundred and sixty-three, and in accordance with my purpose so to do, publicly proclaim for the full period of one hundred days from the day of the first above-mentioned order, and designate, as the States and parts of States wherein the people thereof respectively are this day in rebellion against the United States, the following, to-wit: Arkansas, Texas, Louisiana (except the parishes of St. Barnard, Plaquemines, Jefferson, St. John, St. Charles, St. James, Ascension, Assumption, Terre Bonne, Lafourche, St. Mary, St. Martin, and Orleans, including the City of New Orleans), Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, and Virginia (except the forty-eight counties designated as West Virginia, and also the counties of Berkeley, Accomac, Northampton, Elizabeth City, York, Princess Ann, and Norfolk, including the cities of Norfolk and Portsmouth), and which excepted parts are, for the present, left precisely as if this proclamation were not issued.

And by virtue of the power and for the purpose aforesaid, I do order and declare that all persons held as slaves within said designated States and parts of States are, and henceforward shall be, free; and that the Executive Government of the United States including the military and naval authorities thereof, will recognize and maintain the freedom of said persons.

And I hereby enjoin upon the people so declared to be free to abstain from all violence, unless in necessary self-defense, and I recommend to them that, in all cases, when allowed, they labor faithfully for reasonable wages.

And I further declare and make known, that such persons, of suitable condition, will be received into the armed service of the United States, to garrison forts, positions, stations, and other places, and to man vessels of all sorts in said service.

And upon this act, sincerely believed to be an act of justice, warranted by the Constitution, upon military necessity, I invoke the considerate judgment of mankind and the gracious favor of Almighty God.

In testimony whereof, I have hereunto set my name, and caused the seal of the United States to be affixed.

[L. S.] Done at the City of Washington, this first day of January, in the year of our Lord one thousand eight hundred and sixty-three, and of the Independence of the United States the eighty-seventh.

By the President ABRAHAM LINCOLN.
WILLIAM H. SEWARD,
Secretary of State.

Emanuel the Great, King of Portugal; born May 3, 1469. He succeeded his cousin John II. in 1495; and aided the expeditions of Vasco de Gama, Cabral, Cortereal, and Albuquerque; died in Lisbon, Dec. 13, 1521.

Embalming, the act of preserving the body after death. It was probably invented by the Egyptians, whose bodies thus prepared for preservation are known as mummies. The custom seems to have originated in the idea that the preservation of the body was necessary for the return of the soul to the human form. It is as old as 4000 B. C.

Embargo, in commerce, an arrest on ships or merchandise by public authority; or a prohibition of state, commonly on foreign ships, in time of war, to prevent their going out of or coming into port. A breach of embargo, under knowledge of the insured, discharges the underwriters of all liability.

Embargo Act, an act passed by the American Congress, Dec. 22, 1807, prohibiting exportations from the United States. The act was a measure of retaliation against England and France for their interference with American commerce in 1806-1807, and aimed at forcing them to recede from their position by showing the importance of our commercial relations. It had some effect on these nations, but a far more ruinous result on our own commerce. It was a measure of the Democratic party, and was approved by the agricultural portions of the United States. The New England States, deeply interested in foreign commerce, and the Federalists loudly condemned it. Its opponents, spelling the name backward, called it the "O grab me" Act, and threats of secession were heard from New England. As a result, Congress fixed March 4, 1809, for the termination of the embargo. The first embargo in our history was laid in 1794 for a period of 60 days, and other minor acts of a similar nature were passed during the War of 1812. The plan of limiting commercial intercourse by embargo, non-importation and non-intercourse acts was called the "restrictive system."

Embassy, a mission presided over by an ambassador, as distinguished from a legation or mission intrusted to an envoy. An ambassador, as the representative of the person of his sovereign, can demand a private audience of the sovereign to whom he is accredited, while an envoy must communicate with the minister for foreign affairs.

Ember Days, certain days set apart for prayer and fasting, one special theme of supplication being that the blessing of God may descend on the crops, and consequently that there may be plenty in the land.

Embezzlement, the act of fraudulently appropriating to one's own use the money or goods intrusted to one's care and management; the thing appropriated; larceny by clerks, servants, or agents. An embezzlement is in substance and essentially a larceny, aggravated rather than palliated by the violation of a trust or contract, instead of being, like larceny, a trespass.

Emblem, anything which, by association of ideas, appears to be a visible and suitable representation of some abstract quality; it has a meaning similar to that of the word device. Thus the dog is the emblem of fidelity; the eagle of imperial power; the gridiron is the emblem of St. Lawrence, as the instrument of his martyrdom. An angel bearing a pen is the emblem of St. Matthew; a lion, that of St. Mark; a bull, of St. Luke; and an eagle, of St. John. Flowers are supposed to be emblematic of various qualities, and are, in consequence, sometimes used in the East as a means of communication.

Emblements, the crops actually growing at any time on land; they are considered in law as personal property, and pass as such to the executor or administrator of the occupier, if the latter die before he has actually cut, or reaped, or gathered the same.

Embolism, the blocking up of a blood-vessel by a clot of blood that comes from some distance till it reaches a vessel too small to permit its onward progress, often the cause of sudden paralysis and death, or of gangrene and pyæmia.

Embossing, the act or art of ornamenting by raised work or figures in relief, applied to many objects. Crests or initials are embossed on paper, envelopes, etc. Ornaments are embossed on book-covers, especially on those of cloth. Leather is embossed for binding and many ornamental uses. Textile fabrics are embossed for various purposes. Glass is said to be embossed when it is molded with raised figures.

Embrasures, openings in the parapets, flanks of bastions, and other parts of defense-works, through which cannon are pointed.

Embroidery, the art of producing ornamentation by means of needlework on textile fabrics, leather and other materials.

Embryo, an unborn young animal, or the rudimentary young plant, especially when within the seed. The term fœtus is equivalent to embryo, but is restricted to mammalian development. The term larva is also applied to a young animal which is more or less markedly different from the adult form.

Embryology, that department of biology which traces the development of the individual organism before birth.

Emerald, a well-known gem of pure green color, often very rich and beautiful. In value the emerald is rated next to the ruby, and when of good color, it is set without foil, and on a black ground, like brilliant diamonds. Emeralds of inferior luster are generally set upon a green gold foil. The Oriental emerald is a variety of the ruby, and an extremely rare gem.

Emerald Isle, an epithet applied to Ireland, from the freshness and bright color of the verdure, produced by the abundant heat and moisture continually reaching it from the Atlantic. This epithet was first used by Dr. W. Drennan (1754-1820), in his poem entitled "Erin."

Emeritus, a name given to Roman soldiers who had fulfilled the legal term of military service. It is now applied in colleges and universities to professors who, after meritorious services, are honorably discharged on account of age, etc.; also applied to pastors of churches.

Emerson, Luther Orlando, an American composer; born in Parsonsfield, Me., Aug. 3, 1820; received an academic education; studied music and later taught for eight years in Salem, Mass. He then served as organist and musical director in various churches in Massachusetts. He was the director of about 300 musical festivals and conventions. Composed music for the war song, "We are coming, Father Abraham," written by William Cullen Bryant.

Emerson, Ralph Waldo, an American philosopher; born in Boston, May 25, 1803. He graduated at Harvard College in 1821, and was ordained minister of the Second Unitarian Church of Boston; but soon after formed peculiar views with regard to forms of worship, abandoned his profession and, retiring to the quiet village of Concord, devoted himself to the study of the nature of man and his relation to the universe. He was one of the most eminent modern philosophers of the Pantheistic school, and one of the most remarkable personifications of American genius. He died in Concord, Mass., April 27, 1882.

Emery, a variety of corundum. It is granular in texture, and black or grayish-black in color. It is found at Chester, Mass., and elsewhere in this country, England, the Greek Archipelago, and Asia Minor. In the state of powder it is extensively used for polishing hard substances.

Emery Wheel, a leaden wheel in which emery is embedded by pressure, or, more commonly, a wooden wheel covered with leather and with a surface of emery. It is sometimes called a corundum wheel.

Emetic, a substance which, when taken internally, causes vomiting, by producing an inverted action of the stomach and œsophagus, and the emptying of the stomach of any contents which may be present.

Emigre, a name given to those persons who left France at the commencement of the first French revolution. At the head of these emigrants stood the royal princes of Conde, Provence, and Artois, the first of whom collected a part of the fugitives to coöperate with the allied armies in Germany for the restoration of the monarchy. At Coblentz a particular court of justice was established to settle causes relating to the French emigres. When Napoleon became emperor he granted permission to all but a few of the emigrants to return to their country; but many declined to return till after his downfall. By the charter of 1814 they were shut out from the recovery of their estates and privileges; and though, by a law of April, 1825, some compensation was decreed to them, the grant was withdrawn again after the July revolution.

Emine, Nikita Ossipovich, an Armenian historian; born near Ispahan, Persia, about 1815. He was educated at the Lazareff Institute for Oriental Tongues and at the University, Moscow. His monumental work, a "History of Armenia," was translated into French. He died in Moscow, Jan. 7, 1891.

Eminence, a title given by Urban VIII., in 1631, to cardinals, who up to the period of his pontificate had been called Most Illustrious.

Eminent Domain, the power to take private property for public use. It is well settled that such power exists only in cases where the public exigency demands its exercise. Whether the exercise of the right is justifiable in cases where the statute does not provide compensation is unsettled.

Eminescu, Michael, the great lyric poet of Rumania; born in Bucharest, in 1849. He was for a time editor of "The Times," a strong Conservative journal, and the fierceness of political strife would seem to have spoilt his fine political genius. He died in an insane asylum in 1889.

Emir, or **Amir,** a sovereign, a prince. The title was instituted in A. D. 650 by Fatima, the daughter of Mohammed, and was applied to the descendants of the "Prophet." They alone were permitted to wear the green turban.

Emmanuel, or **Immanuel** ("God with us"), the symbolical name of the child announced by Isaiah to Ahaz and the nation (Isa. vii: 14), and applied by St. Matthew to the Messiah born of the Virgin (Matt. i: 23).

Emmaus, a village of Judea, not far from Jerusalem, which after the Jewish war was colonized with 800 Roman veterans.

Emmet, Robert, an Irish patriot; born in Cork in 1780. He was expelled from Trinity College, Dublin, in 1798, on the ground of exciting disaffection and rebellion, and having become an object of suspicion to the government, quitted Ireland. He returned there on the repeal of the suspension of the Habeas Corpus Act, and became a member of the Society of United Irishmen for the establishment of the independence of Ireland. In July, 1803, he was the ringleader in the rebellion in which Lord Kilwarden and others perished. He was arrested a few days afterward, tried, and executed. His fate excited special interest from his attachment to Miss Sarah Curran, daughter of the celebrated barrister.

Emmet, Thomas Addis, an American lawyer; born in Cork, Ireland, April 24, 1764. A brother of Robert Emmet, being tried for the crime of treason, he was sentenced to exile. He came to the United States and became a noted lawyer in New York city. In 1812 he was elected Attorney-General of the State. He died in New York city, Nov. 14, 1827.

Emmet, Thomas Addis, an American gynecologist; born in the University of Virginia, May 29, 1828. He was a grandnephew of Robert Emmet. He graduated at Jefferson Medical College 1850; author of a work on "Diseases of Women."

Emmons, George Foster, an American naval officer; born in Clarendon, Vt., Aug. 23, 1811; entered the navy as midshipman in 1828, and became passed midshipman in 1831. He was promoted lieutenant in 1841, commander, 1856; captain, 1863; commodore, 1868; and rear-admiral, 1872;

and was retired Aug. 23, 1873. He was a member of the South Sea exploring expedition under Captain Wilkes in 1838–1842; took part in the Mexican War; and during the Civil War captured Cedar Keys, Fla., and Pass Christian, Miss., with 20 prizes in 1862. He served as captain of the fleet under Dahlgren, off Charleston, in 1863; commanded a number of blockading vessels in the Gulf of Mexico in 1864–1865; and raised the American flag over Alaska in 1868. Died in Princeton, N. J., July 2, 1884.

Emollient, a general designation for all substances which soften the part to which they are applied, and soothe and diminish irritation, and to shield them from the action of the air or foreign influences.

Emory, Robert, an educator; born in Philadelphia, Pa., July 29, 1814; graduated at Columbia College in 1831; and studied law. He was appointed Professor of Ancient Languages in Dickinson College in 1834; resigned in 1839; and entered the Baltimore Annual Conference of the Methodist Episcopal Church. He was recalled to the college and made president pro tempore in 1842, and was president from the retirement of Dr. Durbin till his death, in Baltimore, May, 1848.

Emory, William Hemsley, a military officer; born in Queen Anne co., Md., Sept. 9, 1811; was graduated at the United States Military Academy and appointed second lieutenant of artillery in July, 1831; served for five years in garrisons at Fort McHenry and Fort Severn and in Charleston Harbor during the nullification troubles; and resigned his commission Sept. 30, 1836, to engage in civil engineering. In 1855 he was appointed major of the 2d Cavalry; afterward transferred to the 1st Cavalry; and was employed on frontier duty till the Civil War broke out. He was appointed lieutenant-colonel of the 6th Cavalry in 1861; made Brigadier-General of volunteers in 1862; and took part in the siege of Yorktown, the battle of Williamsburg, and the action at Hanover Court House, for which he was brevetted colonel. He had command of the 19th Army Corps in the Red River campaign in 1863; and for his services in the Shenandoah campaign was brevetted Brigadier-General U. S. A., and Major-General for services at Cedar Creek. He was mustered out of the volunteer service in January, 1866. After the war he was in command of the Department of Washington, and a member and president of the Retiring Board till 1876, when he was retired with the rank of Brigadier-General U. S. A. He died in Washington, D. C., Dec. 1, 1887.

Emory College, an educational institution in Oxford, Ga., founded in 1836 under the auspices of the Methodist Episcopal Church.

Empalement, a mode of executing criminals, mentioned by Juvenal, often inflicted in Rome, and still used in Turkey and Arabia. In England the dead bodies of murderers were formerly staked in this manner, previous to being buried.

Empanel, to enter the names of the jurors in a schedule, roll, or page of a book, called the panel.

Emparan, Diego de, a Mexican writer; born in Puebla, April 5, 1718. His book "The Jesuits and the Pope" (1746), published soon after entering the priesthood, gained him five years' imprisonment. The year after his release he issued a bitter criticism of the Church dignitaries, for which he was deposed from the priesthood and imprisoned in the castle of Sant' Angelo, but released later. His work was burned by the executioner. He died in Ravenna, Italy, about 1807.

Emperor, a title first used by the Romans to designate the commander of an army, the command itself being called imperium. In the process of time it was found necessary to confer the imperium permanently on the governors of provinces. Julius Cæsar bore it as being commander-in-chief of the Roman armies, and from him it passed to his successors, the emperors. The title bore with it also the supreme judicial and the administrative power; under the empire the office was free from the temporal and local limitations which had accompanied its enjoyment during the republic. From the Emperors of the West the title passed to Charlemagne, the founder of the Holy Roman Empire. When the Carlovingian family expired in the German branch, the imperial crown became elective; and continued to be so till, in 1806, Francis II. resigned the title and withdrew to the government of his hereditary dominions, under the title assumed in 1805 of Emperor of Austria. The title was frequently assumed in England by the Anglo-Saxon monarchs in imitation of their Roman and Byzantine contemporaries.

In addition to the Emperor of Austria, there are now in Europe the Emperor of Russia, and the Emperor of Germany; in 1901 King Edward VII. of England assumed the title of Emperor of India. The First and Second Empires in France were established in 1804 and 1852; in America there have been Haitian emperors and Mexican, and the Empire of Brazil existed from 1822 to 1889. Modern usage applies the title to sundry semi-civilized monarchs, such as the rulers of Morocco, China, and Japan; and the Turkish sultans assumed it on the fall of the Eastern Empire in 1453.

EMPEROR MOTH, WITH CATERPILLAR, PUPA AND COCOON.

Emperor Moth, the general color greyish, with white hairs and purple tinges; wings with a hinder white band. Two white-purplish and dark-brown transverse stripes and an ocellus on each wing. Expansion of wings in the female occasionally three inches, but in the male only two and a half. The caterpillar feeds on the common ling or heath, on the blackthorn, the bramble, etc.

Empire State, name given to New York State because of its predominant wealth and commerce. The name "Empire City" is bestowed on its commercial metropolis for the same reason.

Empiric, one who practices medicine without a regular professional education, relying solely on his experience and observation. It was originally a respectful designation applied to an ancient medical sect who sought to derive their knowledge from observations or experiment, and considered these the only true methods of acquiring knowledge.

Employers' Liability, the responsibility of the master for the safety of his workmen which the law implies in certain contracts between capital and labor. In most of the United States this liability is not statutory, but is determined by a suit for damages under the law of negligence. If the employer can show contributory negligence on the part of the workmen, he is exempt from liability in a damage suit. The labor unions of the United States, and especially the American Federation of Labor, urged in 1899 the passage by Congress of a new general law on the subject. New York, Pennsylvania, and Illinois have dealt with the problem in enactments which are, however, only tentative. In England employers' liability is recognized and regulated by act of Parliament in which the element of contributory negligence is largely ignored.

Empyrean, a word used by the old metaphysical natural philosophers to designate the highest region of light where the purest and most rarefied elements of fire exist; and by mediæval and modern poets to indicate heaven, the source of light and the home of the blessed.

Empyreuma, the burned smell and acrid taste which result when vegetable or animal substances are decomposed by a strong heat. The cause of the smell and taste resides in an oil called empyreumatic, which does not exist naturally in the substance, but is formed by its decomposition.

Ems, a watering-place in the Prussian Province of Hesse-Nassau, on the river Lahn, not far from its confluence with the Rhine.

Emu, a large bird, native of Australia. Its color is a dull brown, mottled with dingy gray; the young are striped with black. When assailed it strikes backward and obliquely with its feet, and it is so powerful that a stroke of its foot is said to be sufficient to break a man's leg. Well-trained dogs run in before it and spring at its neck. It cannot fly, but runs very fleetly. It is timid and peaceful, and trusts to its speed for safety, unless hard pressed. In a wild state it sometimes occurs in small flocks; but it has now become rare in and around the settled parts of Australia. The eggs are highly esteemed as food. As much as six or seven quarts of oil have been obtained from the skin of a single bird, and on this account it has been much hunted in Australia. The food of the emu consists chiefly of roots, fruit and herbage. Its only note is a drumming sound, which it frequently emits.

Emulsion, the term applied to those preparations in pharmacy in which oleaginous substances are suspended in water by means of gum, sugar, carrageen, yolk of egg, etc.

Enamel, the name given to vitrified substances of various composition applied to the surface of metals.

The enamel of teeth is the very hard translucent white layer covering the working surfaces of the dentine, or ivory of the teeth.

Enarea, or **Limmu,** a kingdom of Africa, S. W. of Shoa, with an area of over 1,100 square miles, and about 40,000 inhabitants. It is a land of forest-clad hills, rising beyond 8,000 feet, with their slopes covered with the wild coffee plant. Its people, belonging to a stem of the Gallas, are mostly Mohammedans. The chief town is Saka, near the Gibbe river.

Encalada, Manuel Blanco, a Chilian patriot; born in Buenos Ayres, in 1790. He studied at Madrid and in the naval academy at Leon, and after deserting from the Spanish ranks, joined the Chilian revolutionary party, serving with distinction in the artillery and the navy. Appointed second to Lord Cochrane, he became Rear-Admiral in 1819 and Major-General of infantry in 1820; in 1825 he was appointed head of the army of Chile. He was for two months president of the republic in 1826, governor of Valparaiso in 1847–1852, and minister to France in 1853–1858. He died in Santiago, Sept. 5, 1876.

Encaustic, a mode of painting in which the colors are laid on or fixed by heat.

Encaustic Brick, a brick ornament with various colors baked and glazed. Diodorus Siculus relates that the bricks of the walls of Babylon, erected under the orders of Semiramis, "had all sorts of living creatures portrayed in various colors on the bricks before they were burnt."

Encaustic Tile, an ornamental tile having several colors.

Encke, Johann Franz, a German astronomer; born in Hamburg in 1791. He studied under the astronomer Gauss at Gottingen. During the War of Liberation (1813–1815) he served as artillerist in the German army; after the peace he became assistant in the observatory of Seeberg, near Gotha. Here he calculated the orbit of the comet observed by Mechain, Miss Herschel, and Pons, predicted its return, and detected a gradual acceleration of movement ascribed by him to the presence of a resisting medium. The comet is now known as Encke's comet. The fame of his works, "The Distance of the Sun," and "The Transit of Venus of 1769," led to his appointment as Director of the Berlin Observatory (1825), a position which he held till his death, 1865.

Encore, a French word meaning again, generally used by the audience of a theater or opera house when requesting the repetition of a performance. It is not used by the French themselves, who, in similar circumstances, exclaim bis ("twice").

Encratites, a rigid sect which rose in the 2d century. It was formed by Tatian, an Assyrian, and a follower of Justin Martyr. Agreeing in most respects with the general Church, he insisted on the essentially evil character of matter, and the consequent necessity of mortifying the body. He lived in celibacy, fasted rigorously, and used water instead of wine in the Lord's Supper.

Encyclical, a letter addressed by the Pope to all his bishops, condemning current errors or advising the Christian people how to act in regard to great public questions. It differs from a "bull" mainly in that the latter is usually more special in its destination. The famous encyclical issued Dec. 8, 1864, by Pius IX., was accompanied by a "Syllabus" condemning specifically 80 principles in religion, philosophy, and politics.

Endemic, a name commonly applied to diseases which attack the inhabitants of a particular district or country, and have their origin in some local cause. Diseases which are endemic in one country may also appear in others, and become epidemic under influences resembling those which are the causes of the endemic in the former place.

Endicott, John, a colonial governor of Massachusetts; born in Dorchester, England, in 1589. He landed as manager of the plantation of Naumkeag (Salem) in 1628. Giving place in 1630 to John Winthrop, he headed a sanguinary expedition against the Indians in 1636, was deputy-governor in 1641–1644, 1650, and 1654, and governor in 1644, 1649, 1650–1653 and 1655–1665. Endicott was an austere Puritan, choleric, benevolent, and brave. He died in Boston, March 15, 1665.

Endicott, William Crowninshield, an American lawyer; born in Salem, Mass., Nov. 19, 1826; was a descendant of John Endicott, the Puritan governor of Massachusetts. He was graduated at Harvard College in 1847. He was an unsuccessful candidate for governor of Massachusetts, on the Democratic ticket, in 1884; was appointed Secretary of War in President Cleveland's cabinet in 1885. He died in Boston, Mass., May 6, 1900.

Endlicher, Stephen Ladislaus, an Austrian botanist; born in Presburg in 1804. He was successively court librarian in Vienna, and keeper of the Natural History Museum; in 1840 was appointed Professor of Botany in the University of Vienna, and director of the botanic garden. He took part on the popular side in the German revolution of 1848. He died in 1849.

Endocarditis, the inflammation of the endocardium or serous membrane covering the valves and internal surface of the heart.

Endogamy, a custom among savage peoples of marrying only within their own tribe.

Endor, a village of Palestine, 4 miles S. of Tabor; a poor mud hamlet. It was the place which Saul visited (I Sam. xxviii: 7), to consult the "woman with a familiar spirit" previous to his fatal engagement with the Philistines.

Endymion, a shepherd, son of Æthlius and Calyce. It is stated that he asked Jupiter to grant him to be always young, and to sleep as much as he would; whence the proverb, "to sleep the sleep of Endymion."

Enema, any liquid or gaseous form of medicine for injection into the rectum. It is most commonly administered to induce peristaltic action of the bowels, but it is often the most desirable means of conveying into the system nourishment or stimulants.

Enemy, one who is unfriendly or hostile to another; one who hates or dislikes; a hostile army or force; the great adversary of mankind, the devil.

Energetics, that branch of science which investigates the laws relating to physical or mechanical forces, as opposed to vital. It thus comprehends the consideration of the whole range of physical phenomena.

Energy, the power that a body or system possesses of doing work; a term in physics. There is no manifestation of energy apart from matter. There are two main types of energy: Energy of motion (kinetic energy), and energy of position (potential energy). Currents of air or of water possess kinetic energy; a stone resting on the brow of a cliff, and water at the edge of a fall, possess potential energy.

Enfantin, Barthelemy Prosper, one of the chief representatives of the Saint-Simon school of Socialism;

born in Paris, Feb. 8, 1796. He died Aug. 31, 1864.

Enfeoffment, the act of bestowing or conveying the fee-simple of any estate, or the instrument or deed by which the fee-simple of an estate is conveyed.

Enfield, the name of a village or small town in Middlesex, England, 10 miles N. of London, where there is a large government arms factory.

Enfield Rifle, a muzzle-loading rifle used in the British army as the infantry service-arm prior to the introduction of the breech-loading system. Large numbers of these rifles were converted into breech-loaders on the Snider principle, and transferred to the volunteers when the Martini-Henry rifle was issued to the regulars. To these converted weapons the term Snider-Enfield or simply Snider is applied.

Engadine, a famous valley in the Swiss canton of the Grisons, and one of the loftiest inhabited regions in Europe. It extends N. E. for about 65 miles along the banks of the Inn and its lakes, from the foot of Mount Maloja to the village of Martinsbruck.

Engels, Frederich, an English Socialist; born Nov. 28, 1820, the son of a Barmen manufacturer. He wrote "The Working Classes in England." He is best known as the friend, colleague, and continuator of Karl Marx, and author of works on the family and the development of Socialism. After 1869 he lived mainly in London, England, and died Aug. 5, 1895.

Enghien, Louis Antoine Henri de Bourbon, Duke of; born in Chantilly, Aug. 2, 1772; son of Louis Henry Joseph Conde, Duke of Bourbon. On the outbreak of the Revolution he quitted France, traveled through various parts of Europe, and went in 1792 to Flanders to join his grandfather, the Prince of Conde, in the campaign against France. From 1796 to 1799 he commanded the vanguard of Conde's army, which was disbanded at the Peace of Luneville (1801). He then took up residence as a private citizen at Ettenheim, in Baden, where he married the Princess Charlotte de Rohan Rochefort. He was generally looked on as the leader of the Emigres, and was suspected by the Bonapartists of complicity in the attempt of Cadoudal to assassinate the first consul. An armed force was sent to seize him in Baden in violation of all territorial rights, and he was brought to Vincennes, March 20, 1804. A mock trial was held the same night; and on the following morning he was shot in the ditch outside the walls. It was this event which drew from Fouche the comment since become proverbial: "It is worse than a crime! it is a blunder."

Engine, a machine of complicated parts which acts automatically both as to power and operation. It is distinct from a machine, the motor of which is distinct from the operator; and from a tool, which is propelled and operated by one person.

Engine Dynamo, an invention for generating electricity. Up to 1894 the most economical method of producing electricity was through the dynamo, a steam engine to drive it, a boiler to supply the engine with steam, and the furnace to heat the boiler. Nicola Tesla, the inventor of the engine dynamo, retained the furnace and the boiler, but constructed an apparatus which combined an engine and dynamo. This engine dynamo has hardly one of the features which distinguish an engine. There are no fly wheels, piston, crank shaft, belts, or the heavy iron frame visible. In fact, the machine has the appearance of a dynamo with a steam pipe directly connected to it. Tesla's own explanation of this device is that the steam is used to create a vibrating motion of certain mechanism (in a cylinder) which separates so as to cut the lines of magnet force of the large field magnets in the apparatus, thus creating electricity. It is pointed out that by this method important advantages are gained, viz., the absence of a costly engine; and what is of much higher importance, the generation of electricity at about one-half the cost of former methods. These claims have been verified by the operation of machines that have been made and tested.

Engineer Corps, United States, a technical military body in the War Department under the direct command of the chief of engineers. The corps is charged with all duties relating to construction and repair of fortifications, whether permanent or temporary; with torpedoes for coast defense; with all works of defense; with all military roads and bridges, and with such surveys as may be required for these objects, or the movement of armies in the field. It is also charged with the river and harbor improvements with military and geographical explorations and surveys, with the survey of the lakes, and with any other engineer work specially assigned to the corps by acts of Congress or order of the Secretary of War.

Engineering, the branch of science dealing with the design, construction and operation of various machines, structures, and engines used in the arts, trades, and everyday life. Engineering is divided into many branches, the more important being civil, mechanical, electrical, mining, military, marine, and sanitary engineering.

Civil engineering is the most extensive and embraces the arts of architecture, surveying, bridge, railroad, harbor, and canal construction, and the building trades. The civil engineer should have a knowledge of the fundamental principles of mathematics, mechanics, draughting, geodesy, surveying, and various forms of construction. Civil engineering covers so wide a field that it has become of late necessary to specialize in the individual branches.

Mechanical Engineering comprises the design, construction, and operation of machinery, the design of manufacturing plants, and all branches of industrial production. The mechanical engineer's education should be similar to that of the civil engineer, with the addition of a knowledge of the theory and practice of machine construction.

Electrical Engineering is a branch of mechanical engineering and includes the application of electricity to mechanical and industrial pursuits, as derived from some other source of energy.

Mining Engineering is a combination of the three preceding branches as applied to the discovery and operation of mines, the building of mineral working plants, and treatment of ores.

Military Engineering deals entirely with the arts of war, the design, construction and maintenance of fortifications, machines of defense and attack, ordnance, and the surveying of country in preparation for military operations.

Marine Engineering is partly military and partly civil, embracing naval architecture, building and operating of ships and naval accessories. In the military sense, it comprises the construction of war vessels and the construction and placing of torpedoes, submarine mines, etc.

Sanitary Engineering consists of the construction of sewers and drains, providing for the cleaning of city streets and the disposal of garbage and sewage, reclaiming of swamps, and overcoming of all conditions tending to interfere with public health.

The education and training of the engineer in modern times have called for the establishment of technical schools and courses in engineering in the large colleges and universities. These schools provide the student with the theories of mathematics, mechanics, and engineering and by means of extensive laboratory and outside work provide him with practice in the design, construction, and use of modern engineering appliances.

Engineers, Royal, a corps in the British army intrusted with the construction of all military works, plans, surveys, etc. In 1772 the first company of "sappers and miners" was organized at Gibraltar. In 1783 the engineers were raised to be a royal corps, and in 1812 several companies of artificers were converted into "sappers and miners." This name was abolished and that of royal engineers substituted in 1857. The corps usually numbers from 5,000 to 6,000 officers and men. The privates, who are generally skilled artisans, receive a much higher rate of pay than ordinary infantry soldiers.

England, including **Wales,** the S. and larger portion of the island of Great Britain. On the N. it is bounded by Scotland; on all other sides it is washed by the sea; on the

E. by the North Sea or German Ocean; on the S. by the English Channel; and on the W. by St. George's Channel and the Irish Sea. Its figure is, roughly speaking, triangular, but with many windings and indentations, the coast-line measuring not less than 2,765 miles. The length of the country, measured on a meridian from Berwick nearly to St. Alban's Head, is 365 miles. Its breadth, measured on a parallel of latitude, attains its maximum between St. David's Head, in South Wales, and the Naze, in Essex, where it amounts to 280 miles. See various titles dealing with English historical personages, events, institutions, and conditions.

England, Church of, the official name of that body of Christians who have a formal head in the person of the hereditary ruler of England. This designation is used in two senses: first, a general one signifying the Church regarded as continuous, which, from the first triumph of Christianity till now, has been that of the English people; secondly, in a more specific sense, the Protestant Church now established in England as distinguished from the Church of Rome.

In the English Church, at present, there are two archbishops and 29 bishops, both of the former and 24 of the latter having seats in the House of Lords; subordinate to these are 30 deans, 82 archdeacons, 613 rural deans, and about 13,500 beneficed clergy, the whole clerical staff of all grades being about 23,000. Including infants, it is believed to have above 13,000,000 adherents in England and Wales. Previous to 1871, the English Church and the Established Church of Ireland constituted but a single body called the United Church of England and Ireland. It is powerful also in the colonies, and by means of its two great societies, the Propagation and the Church Missionary Societies, acts effectively on nearly every part of the heathen world.

Englis, John, an American shipbuilder; born in 1808. He built his first steamers on Lake Erie in 1837. In 1861 he built the "Unadilla," the first gunboat built for the United States government. Afterward he built the steamboats "St. John," "Dean Richmond," "Drew," "Newport," "Old Colony," "Grand Republic," and "Columbia," etc. Many improvements in shipbuilding were due to him. He died in 1888.

English, Earl, an American naval officer; born in Crosswicks, N. J., Feb. 18, 1824. Entered naval service, 1840; served in Mexican War; made lieutenant 1855; served in Chinese waters 1857; became lieutenant-commander 1862, and served in the Civil War; captain 1871, commodore 1880, and rear-admiral 1884; commanded European station 1884, and retired 1886. He died in Washington, D. C., July 16, 1893.

English, George Bethune, an American author; born in Cambridge, Mass., in 1787. He studied law and theology, and in 1813 published "The Grounds of Christianity Examined," a work in favor of Judaism. In 1820 he served as an officer of artillery in the army of Ismail Pasha against Sennaar, and was afterward United States agent in the Levant, returning home in 1827. He died in 1828.

English, Thomas Dunn, an American author; born in Philadelphia, Pa., June 29, 1819; was graduated in medicine at the University of Pennsylvania in 1839; admitted to the bar in 1842; engaged in journalism in New York in 1844–1859; then resumed medical practice in Newark, N. J. He was a member of the state assembly in 1863–1864, and of Congress in 1891–1895. He was the author of "Ben Bolt," an exceedingly popular ballad; "Old Glory," etc. He died April 1, 1902.

English, William Hayden, an American capitalist; born in Lexington, Ind., Aug. 27, 1822; received a college education and became a lawyer; was elected to Congress in 1852 and served there through four consecutive terms. As a member of the Committee on Territories, in opposition to his own party, he worked against the admission of Kansas to the Union. He reported from the Committee of Conference what was known as the "English bill," in which it was urged that the question of admission be referred back to the people of Kansas according to the provision of the Lecompton constitution.

This bill was adopted and the people voted against admission. He strongly opposed secession, and warned Southern congressmen that the North would never countenance such a policy. In 1861 he retired to private life; was president of the First National bank of Indianapolis in 1863-1877, and was also interested in railroads. In 1880 he was the Democratic nominee for Vice-President on the ticket with General Hancock. He published a historical and biographical work on the constitution and lawmakers of his State and furnished money to the Indiana Historical Society to complete and issue the "History of Indiana," which he had begun. He died in Indianapolis, Ind., Feb. 7, 1896.

English Art, a term under which are usually classed English architecture, painting and sculpture.

English Channel, the arm of sea which separates England from France, extending, on the English side, from Dover to Land's End; and on the French from Calais to the island of Ushant. On the E. it communicates with the German Ocean by the Strait of Dover, 21 miles wide; and on the W. it opens into the Atlantic by an entrance about 100 miles wide. At its greatest breadth it is about 150 miles.

The advantages of a railway tunnel across the Channel at its narrowest part have been frequently urged; and an English company formed for the purpose of constructing a tunnel half way across from Dover to meet a similar tunnel starting from near Calais, pushed an excavation under the sea for over 2,000 yards, but was interdicted by the British government for military reasons. This tunnel would have a total length of 23 miles.

English Language, a member of the Teutonic family of languages, which form three groups: (1) Low German, (2) Scandinavian, and (3) High German. The English language belongs to the first of these groups. The Teutonic languages themselves form a subdivision of the European division of that great family of languages called Indo-European. The English language is closely related to dialects still spoken on the N. shores and lowlands of Germany. The original inhabitants of England were Celts, and but few words of their language survive.

Nowhere in the world is English more purely spoken than by educated Americans, and it is well known that many so-called Americanisms are simply survivals of English as spoken when the Pilgrims and Puritans departed from their old homes for the New World. The English language ought to be called the American language, as the English-speaking population of the United States is larger than that of Great Britain.

Engraving, in the primitive sense of the term, the art of representing objects and depicting characters on metal, wood, precious stones, etc., by means of incisions made with instruments variously adapted to the substances operated upon, and the description of work executed. The different inventions, however, which superseded graving or incising, led to the word being used in a wider sense; and though yet applicable, in its original meaning, to seal or gem engraving, to die cutting and wood engraving, it now comprehends all works of art executed on plates intended for printing, by whatever means they are produced. Impressions from metal plates are named engravings, prints, or plates; those printed from wood being called indifferently wood engravings or wood cuts.

Engraving in recent times has suffered much from the rivalry of photographic and mechanical substitutes. The most important of these is known as photogravure or heliogravure. The beauty of the work produced by means of this process in the reproduction of paintings, of drawings in monochrome made for the purpose, and of photographs direct from nature, has raised it to a position of great importance. A photomechanical process which is much used in the reproduction of the plates of the older engravers and etchers, and in the production of plate-reproductions from pen drawings has been carried to great perfection, some of the work produced by Amand-Durand of Paris being almost equal to the finest original etchings. A positive photograph is taken of the drawing or engraving to be reproduced; this is placed over a copper plate coated with a bituminous varnish, and exposed to the light. Where the lines of the photograph have protected the varnish from the light it remains soluble, but where the light has affected it through the glass it becomes insoluble. The varnish may then be dissolved from the lines and the copper exposed exactly as if the etching point had been used to make the drawing on an etching ground. The plate is then bitten in the usual manner, and finally touched up and improved with the graver.

Ennemoser, Joseph, a medico-philosophic writer; born in the Tyrol, 1787. He studied at Innsbruck 1806; fought in the rising of the Tyrolese against the French 1809; was dispatched to England to solicit aid for the Tyrolese in their meditated insurrection against French domination; was afterward officer in a Prussian regiment of volunteers, and collected a company of Tyrolese marksmen who did good service 1813–1814. After the Peace of Paris he went to Berlin, where he finished his studies and, 1816, took his degree in medicine. In 1819 he became Professor of Medicine at the new University of Bonn. In 1841 he went to Munich, where he obtained great reputation by the application of magnetism as a curative power. He died in 1854.

Ennery, Adolphe Philippe D', a French dramatist; born in Paris in 1811; began life as a clerk, but later turned to the drama; studied scenic effects, the quick change from the tragic to the comic, and the contrast between the serious and ludicrous characters. He subsequently became the master of modern melodrama. During the 50 years of his active life he accumulated a fortune of $1,200,000. He died in Paris, Jan. 26, 1899.

Enniskillen, a borough in Ireland, 87 miles W. S. W. of Belfast; famous for the victory, in 1689, of the troops of William III., under Lord Hamilton, over a superior force of James II., under Lord Galmoy. The banners taken in the battle of the Boyne hang in the town hall.

Enoch, the eldest son of Cain, who called the city which he built after his name (Gen. iv: 17). Also one of the patriarchs, the father of Methuselah. He "walked with God; and he was not; for God took him" (Gen. v: 24) at the age of 365 years. The words quoted are generally understood to mean that Enoch did not die a natural death, but was removed as Elijah was.

Enoch, Book of, an apocryphal book of an assumedly prophetic character, to which considerable importance has been attached on account of its supposed quotation by St. Jude in the 14th and 15th verses of his epistle. It is referred to by many of the early fathers; is of unknown authorship, but was probably written by a Palestinian Hebrew. Its date is also uncertain, critical conjecture ranging from 144 B. C. to 132 A. D. Until the close of the 18th century it was known in Europe only by the references of early writers, and by the passage of St. Jude supposed to be founded on it. On his return from Egypt Bruce brought with him from Abyssinia three manuscripts containing a complete Ethiopic translation of it. It has since been repeatedly published, translated, and criticized in Europe.

Ensign, the flag or colors of a regiment. Also a former rank of commissioned officers in a regiment of infantry, by the senior of whom the regimental ensigns or colors are carried. The name is now abolished, the title of 2d lieutenant being substituted for it. In the navy, the national ensign consists of a red-and-white striped flag, 13 stripes, with blue field in upper inside corner containing a silver star for each State of the Union. Carried by all American vessels except yachts, which have an ensign of their own. Also the title of the lowest grade of commissioned officers in the United States navy.

Ensilage, the name given to a method of preserving green fodder in an air-and-water-tight pit, or other receptacle, called a silo, and also to the fodder thus preserved. The system was invented by Auguste Goffart, of France, and introduced into the United States by Francis Morris, of Baltimore. An "Ensilage Congress" was held in New York, Jan. 25–26, 1882, and the subject has since received much attention from farmers. The most approved mode of procedure is as follows: Any green crop may be treated, but must be sown so as to be in blossom before frost. The silo is a pit or cellar of any convenient size, with solid walls and floor of stone or cement. The fodder is reaped, subjected to the action of a cutter while green, and dumped into the silo. A little salt, in the proportion of a bushel to every 10 or 15 tons, will render it even more palatable to the cattle. A heavy covering board must be placed over all when the silo is full, well weighted with a pressure of 150 pounds to the square foot. For this purpose rocks, sand-bags, or grain-bags may be used. When opened, which should not be earlier than November or December, cattle will eat the ensilage with avidity. It should be cut with a hay-knife, entrance being had by means of a door in the end of the silo.

Entablature, in architecture, the horizontal, continuous work which rests upon a row of columns, and belongs especially to classical architecture. It consists of three principal divisions, the architrave immediately above the abacus of the column, next the frieze, and then the cornice. In large buildings projections similar to and known also as entablatures are often carried round the whole edifice, or along one front of it.

Entail, in law, the settlement of an estate by which a freehold is limited to a person and the heirs of his body, with such particular restrictions as the donor may specify. Entailed estates are divided into general and special, the former when the estate is given to the donee and his heirs without exception, the latter when the estate is limited to certain heirs to the exclusion of others.

Entellus Monkey, or **Hanuman,** the most sacred monkey of the Hindus, worshiped as half divine, and regarded as the host of ancestral souls. The body is 4½ feet in length, from ashy-gray to dirty yellow in color; the face is dark, with bushy grayish-white whiskers; and the tail is longer than the body. Entellus monkeys live in troops, are noisy and quarrelsome, and do much mischief near towns and plantations, but are nevertheless reverenced and petted. Their home is in the "hot tropical plains of the northwestern Gangetic provinces," but they have been introduced elsewhere.

Entente Cordiale, a cordial understanding, or friendly disposition and relations, between the governments of two countries.

Enteric Fever, the correct designation of what is usually called typhoid fever.

Enteritis, inflammation of the small intestines, marked by diarrhœa, pain, aggravated on pressure, quick and strong pulse, with increased temperature.

Entomology, the branch of zoölogy which treats of insects. Insects exceed in number all other animals taken together. Over 80,000 species of beetles or coleoptera and about 15,000 moths and butterflies have been recorded; and Speyer estimates the total census at 200,000, while M'Lachlan concludes that future entomological industry will raise the sum total of insect species to a million.

As far as insects are concerned, the struggle between man and animals is by no means finished. Strong in numbers, many of them are directly or indirectly injurious to man and his property to an extent which frequently affects the prosperity of a nation. Direct injuries to man's person are familiarly illustrated in the parasitism of fleas, lice, etc., but these are less important than the share the mosquito seems to have in the loathsome disease Elephantiasis arabum. Personal injuries are dwarfed when we think of those done to property, and especially to crops and herds, by voracious or parasitic insects. Clothes-moth and furniture-borer, vine-insects and Colorado beetle, the botflies which attack sheep, cattle, and horses are familiar illustrations of formidable pests. It should also be noted how the hostile insects which infest forest trees and vegetation generally may occasion changes which have far-off effects on the fauna, scenery, and even climate of a countryside. The majority of plants are dependent on insects, as the unconscious bearers of the pollen essential to the normal cross-fertilization of flowers.

Many insects injure plants without any compensating benefit, and in this connection there are numerous cases in which plants and insects (especially ants) form a mutual partnership. Such plants are saved by their bodyguard of ants from unwelcome visitors, and the benefit is sometimes returned by the growth of special shelters, tennated by the partner-insects.

Entozoa, a term which should, according to its literal meaning, include all animals which pass any period of their lives within the bodies of others not belonging to the same species. Thus the ichneumon, whose larva lives in that of the butterfly, the bot of the horse's stomach, are Entozoa, like the tapeworm. But the term is now restricted to those members of the annuloid group which are commonly known as worms.

The transfer from one animal to another seems essential to the process which the preference for one organ or tissue also subserves. The transfer from mice to cats, from dogs to sheep, from dogs to man, and the converse, are easily understood, both vegetable and animal food helping to carry the minute eggs or larvæ. The species of Entozoa are enormous. The conditions on which their multiplication depend are want of attention in the cleansing of food, contamination of water by the droppings of animals or the decay of their bodies; and, as regards the individuals an acid state of the secretions, such as accompanies strumous diseases, is essential for their speedy multiplication.

Envelope, a paper case to contain a folded letter. Till the introduction of cheap postage it was customary to secure by wafer or sealingwax the folded sheet on which the letter was written. When postage was rendered uniform for all distances, and prepayment enforced or recommended, it was supposed that stamped envelopes would be convenient, sealing the letter and paying the postage at one operation. These, however, were soon found to be inconvenient, and the great development of envelope manufacture has taken place in the direction of unstamped envelopes, to which adhesive stamps can be attached.

Envoy, a person deputed by a ruler or government to negotiate a treaty, or transact other business, with a foreign ruler or government. We usually apply the word to a public minister sent on a special occasion or for one particular purpose; hence an envoy is distinguished from an ambassador or permanent resident at a foreign court, and is of inferior rank.

Eocene, in geology, a term applied to the lower division of the Tertiary strata.

Eolus, in Roman mythology, god of the winds.

Eon de Beaumont, Charles Genevieve Timothee d', or **Chevalier d'Eon,** a French diplomatist; born in Tonnerre, Oct. 5, 1728. Introduced by the Prince de Conti in 1755 to Louis XV. the latter employed him in diplomatic missions to Russia and Austria. He was sent to London in 1762 as secretary of embassy, and shortly after was made minister plenipotentiary. On the death of Louis XV., the French ministry deemed it prudent to recall him, as they were afraid he might betray their secrets to the English government, which made him brilliant offers. After much negotiation Eon consented to surrender certain compromising papers. He was noted for his success in disguising himself as a woman. He died in London, England, May 21, 1810.

Eophone, a device for intensifying and locating sounds at sea. Its primary purpose is to prevent collisions between vessels in time of fog and at night by warning them of each other's presence and in like manner to prevent shipwreck by warning vessels of the proximity of a dangerous shore.

Eos, among the ancient Greeks the goddess of the dawn.

Eotovos, Baron Jozsef, a Hungarian novelist; born in Buda in September, 1813; died February 2 or 3, 1871.

Eozoon, a supposed gigantic fossil found in the limestone of the Laurentian rocks of Canada; and in the

Archæan rocks of Germany; supposed to be the oldest form of life traceable in the past history of the globe. There is doubt as to their being true fossils, many geologists now regarding them as of mineral origin.

Epact, in chronology, the excess of the solar month above the lunar synodical month, and of the solar year above the lunar year of 12 synodical months. The epacts are annual or monthly.

Epaminondas, an ancient Greek hero, who for a time raised his country, Thebes, to the summit of power and prosperity. He was born about 418 B. C. He took the leading part in the struggle during which Spartan supremacy in Greece was destroyed, and the supremacy of Thebes temporarily secured. Four times he successfully invaded the Peloponnesus at the head of the Thebans, but after his death Thebes soon sank to her former secondary condition. Throughout life he was distinguished for the friendship subsisting between him and Pelopidas, with whom he served in the Spartan campaign 385 B. C. His character is one of the finest recorded in Greek history, and his virtues have been praised by both Xenophon and Plutarch. He was killed at the battle of Mantineia 362 B. C.

Epaulet, or **Epaulette**, an ornamental shoulder-piece belonging to a military, naval, or other dress. Epaulets are made of various forms and material according to the rank of the wearer.

Epee, Charles Michel Abbe de l', instructor of the deaf and dumb; born in Versailles, France, Nov. 25, 1712. Taking orders, he became a preacher and canon at Troyes, but later lived in retirement in Paris. In 1765 he first began to occupy himself with the education of two deaf and dumb sisters; invented a language of signs, by which persons thus afflicted might be enabled to hold intercourse with their fellow-creatures. He determined to devote his life to the subject. At his own expense he founded an institution for the deaf and dumb, which received an annual subsidy. It was not converted into a public institution till two years after his death, Dec. 23, 1789.

Epeus, the maker of the wooden horse used in the siege of Troy.

Ephah, or **Bath**, a Hebrew measure of capacity, containing, according to one estimate or calculation, 8.6696 gallons; according to another only 4.4286 gallons.

Ephemera, so named from the extreme shortness of their lives in the perfect state. They are known as Mayflies or day-flies. In the state of larvæ and pupæ they are aquatic and exist for years. When ready for their final change they creep out of the water, generally toward sunset of a fine summer evening, beginning to be seen generally in May. They shed their whole skin shortly after leaving the water, propagate their species, and die, taking no food in the perfect state. The May-fly is well known to anglers.

Ephesians, The Epistle to the, one of the books of the New Testament. It seems to have been sent forth by St. Paul about A. D. 62, while he was a prisoner in Rome. He sent it to its destination by the hand of Tychicus (Eph. vi: 21). The Church at Ephesus had been founded by Paul himself, or at least he had raised it from the feebleness in point of numbers and knowledge in which it had been when he commenced his missionary work in that city. For two years he preached Christ, not merely to the permanent residents in Ephesus, but to the multitudes who resorted thither as pilgrims to visit the celebrated Temple of Diana (Acts xix: 10). When driven from the city, owing to a riot raised by one whose craft would have been in danger had idolatry fallen, he retained a deep interest in his converts; and, dispatching Tychicus to inquire after their welfare (Eph. vi: 21), gave him the canonical "Epistle to the Ephesians," for the Church just named, with another to the Church at Colosse (Col. iv: 7). It is evident from the "Epistle to the Ephesians" that the converts at Ephesus were mainly Gentiles (Eph. ii: 11, iii: 1), and prominent in the didactic part of the letter is the doctrine that Christ had broken down the wall which severs Jew and Gentile, putting both on the same level of privilege within His Church. (Eph. ii. 11–22, iii; 1–6). The Epistle concludes with a series of practical exhortations.

Ephesus, a famous city of Asia Minor, now in ruins, about 38 miles S. S. E. of Smyrna. It was the ancient capital of Ionia, and had one of the seven Christian Churches founded by the apostles. Its temple, dedicated to Diana, was considered one of the seven wonders of the world. Its dimensions were 425 feet long and 200 broad. The roof was supported by 127 columns, 60 feet high, which had been placed there by as many kings. Of these, 36 were carved in the most beautiful manner, one of which was the work of the famous Scopas. This celebrated building was not completed till 220 years after its foundation. Ctesiphon was its principal architect. The riches which were in the temple were immense, and the goddess who presided over it was worshiped with the most awful solemnity. It was burnt on the night that Alexander was born, but soon after it rose from its ruins with greater splendor and magnificence.

Ephesus, Councils of, two ecclesiastical assemblies held at Ephesus. The first was the third ecumenical council, summoned by Emperor Theodosius II., in 431, to settle a complicated controversy, involving among other things the fate of Nestorius, Bishop of Constantinople. The second was the so-called "robber synod," convened by Theodosius (449), to consider again the case of Nestorius. In the proceedings of this council no opposition to the will of the president, Dioscuros, Bishop of Alexandria, was allowed; the bishops were compelled to sign blank papers, to be filled up as the leaders chose. These lawless methods, as well as the violent measures carried through by their aid, hastened a crisis in the Eastern Church, and greatly furthered the advancing power of the Bishop of Rome, by compelling an appeal to him against oppression and wrong.

Ephod, a costly vestment worn by the Jewish high-priest. It consisted of two shoulder-pieces, one covering the back, the other the breast and upper part of the body. Two onyx stones set in gold fastened it on the shoulders. Just above the girdle, in the middle of the ephod, and joined to it by little gold chains, rings, and strings, rested the square oracular breast-plate with the mysterious "Urim and Thummim." Originally intended to be worn by the high-priest exclusively ephods of an inferior material seem to have been in common use in later times by the ordinary priests. King David, when bringing the ark back to Jerusalem, appeared in one.

Ephors, or **Ephori,** magistrates common to many Dorian communities of ancient Greece. The most celebrated were the ephori of Sparta. They were five in number, elected annually, and both the judicial authority and the executive power were almost entirely in their hands. Their power became an intolerable burden, especially to the kings, and in 225 B. C. Cleomenes murdered the whole college and abolished the office.

Ephraim, the younger son of Joseph and the founder of one of the 12 tribes of Israel. When the Israelites left Egypt the Ephraimites numbered 40,500, and their possessions in the very center of Palestine included most of what was afterward called Samaria.

Epic, a poem of the narrative kind. This is all that is properly signified by the word, although we generally understand by it a poem of an elevated character, describing the exploits of heroes. As action is the object of the drama, so narration is that of the epic. But as the event related is something already past, the epic is less stirring than the drama which represents an action as just happening.

Epictetus, a celebrated Stoic; born in Hierapolis, Phrygia, about A. D. 60, and lived at Rome, where he was a slave of Epaphroditus, a brutal freedman of Nero, whose abuse and maltreatment he bore with fortitude. Epictetus himself did not leave any written account of his doctrines, which appear to have been of the most elevated kind. In his discourses he aimed to impress his hearers with the love of practical goodness. He did not despise knowledge, but considered it as a means to an end. His doctrines approach more nearly to Christianity than those of any of the earlier Stoics, and although there is no trace in what is recorded of them of his having been directly acquainted with Christianity, it is at least probable that the ideas diffused by Christian teachers may have indirectly influenced them.

Epicurus, the founder of a celebrated philosophy; son of Neocles and Charestrata of Gargettus; born in the island of Samos, 342 B. C., and spent there the first 18 years of his life. He then repaired to Athens (323 B. C.). His mode of life appears to have been simple and temperate. He abstained, as a principle, from politics, and took no part in public affairs. During the latter part of his life he was afflicted with severe physical suffering. For many years he was unable to walk, and about a fortnight before his death his maladies were aggravated by the formation of stone in his bladder, which brought his life to a close amid acute suffering at the age of 72, 270 B. C.

Epidaurus, one of the most important towns and commercial seaports of ancient Greece, situated in Argolis, in the Peloponnesus, particularly celebrated for its magnificent temple of Æsculapius, which stood on an eminence not far from the town. An inscription over the entrance declared it to be open only to pure souls. Crowds of invalids resorted to the place in hopes of obtaining a cure from the beneficent divinity, in whose honor festivals were celebrated yearly. It received its name from Epidaurus, a son of Argus and Evadne. It is now called Pidavro, or Epidairo, and is the place where in 1821 the first Greek Congress assembled.

Epidemic, a disease which attacks many persons at the same time at different places, spreading with great rapidity, extremely virulent and fatal at the first onset, gradually becoming spent and feeble, so that the early cases are usually the worst. The plague, cholera, smallpox, influenza, etc., are epidemics. The lower animals are also subject to epidemic influences. Epidemics have a great tendency to alternate, such as smallpox, then measles, then scarlet fever, and so on, seldom markedly running simultaneously.

Epidermis, in human anatomy, the cuticle or scarf-skin, constituting the external layer of the skin, and protecting the inner ones. It is thickest in the palms of the hands and the soles of the feet, where the skin is much exposed to pressure. In comparative anatomy, a somewhat similar cuticle in several animals; also a layer of animal matter covering the shells of mollusks. In botany, the true skin of a plant below the cuticle; also the general integument as a whole, divided into cuticle and derma.

Epidote, a monoclinic subtransparent brittle mineral. It is found in many crystalline rocks, and more especially in those containing hornblende.

Epigastrium, the upper fore part of the abdomen, reaching from the pit of the stomach to an imaginary line above the umbilicus (navel) supposed to be drawn from the one extremity of the last false rib, on one side, to the corresponding point on the other.

Epiglottis, a cartilaginous valve which partly closes the aperture of the larynx during the process of swallowing. When respiration takes place the epiglottis is vertical but falls back and covers the larynx on the approach of food.

Epigram, a short poem of a pointed or antithetical character, or any short composition expressed neatly and happily. Epigram was the name given by the Greeks to a poetic inscription on a public monument. Of the Roman poets, Catullus and Martial are most celebrated for their epigrams.

Epilepsy, falling sickness. It derives its name, epilepsia, from the suddenness of the attack. The leading symptoms are a temporary suspension of consciousness, with a recurring spasm.

Epilogue, the closing speech or short poem addressed to the audience at the end of a play. The epilogue is the opposite of the prologue, or opening address.

Epiphanius, a Greek father of the Church; born in Palestine early in the 4th century; educated among the Gnostics in Egypt; after which he returned to Palestine and became the disciple of the monk Hilarion. He was chosen bishop of Salamis, in the isle of Cyprus, 367. Epiphanius was a man of some learning but little judgment, and was a vehement opponent of Origen. He wrote a book entitled

"Panarium" against all heresies. He died in 403.

Epiphany, a Church festival, observed on Jan. 6 in honor of the adoration of our Saviour by the three magi, or wise men, who came to adore Him and bring Him presents, led by the star. As a separate festival it dates from 813.

Epirus, a province of ancient Greece, now forming the S. part of Albania. It was separated from Grecian Illyria by the Ceraunian mountains, and by the famous river Pindus from Thessaly. The river Acheron, also famous in mythological story, flowed through the limits of this province and here were also the celebrated temple and sacred oak grove of Dodona, famous for its oracles. Pyrrhus, King of Macedon, was a native of Epirus, which country passed successively into the hands of the Romans and the Turks. It was ceded to Greece by the Turks in 1881.

Episcopacy, that form of Church government in which one order of the clergy is superior to another; as bishops to priests and deacons. Much discussion has taken place on the subject of episcopacy. Nothing conclusive can be gathered concerning it in the New Testament; but there can be no doubt that it existed from the earliest historic ages down to the time of the Reformation. Presbyterians and Independents argue, on the other hand, that, as there is nothing definite concerning it in Scripture, Christians are left a discretionary power of modeling the government of their Church in such a manner as may seem to them most meet; and that every Christian society has a right to make laws for itself, provided these laws are consistent with charity and peace, and with the fundamental doctrines and principles of Christianity. The power vested in the bishops or higher clergy differs very much among the different episcopal bodies. The Roman Catholic and the Greek Churches as also the Church of England and the Methodist Church, are episcopalian.

Episode, an incidental narrative, or digression in a poem, which the poet has connected with the main plot, but which is not essential to it.

Epistaxis, a medical term for nosebleed. Its exciting causes are anything that will induce local congestion, as running, coughing, blowing the nose, etc., provided there is a disposition to it.

Epitaph, an inscription on a tomb or monument, in honor or memory of the dead. Epitaphs were in use both among the Greeks and Romans. The Greeks distinguished by epitaphs only their illustrious men. Among the Romans they became a family institution and private names were regularly recorded on tombstones. The same practice has generally prevailed in Christian countries. On Christian tombstones epitaphs usually give brief facts of the deceased's life, sometimes also the pious hopes of survivors in reference to the resurrection or other doctrines of the Christian faith, etc. Many so-called epitaphs are mere witticisms, which might be described as epigrams, and which were never intended seriously for monumental inscriptions. The literature of the subject is very large.

Epithalamium, a nuptial song or poem in praise of a bride and bridegroom. Among the Greeks and Romans it was sung by young men and maids at the door of the bridal chamber of a new-married couple.

Epithelium, a term introduced by Ruysch to designate the cuticular covering on the red part of the lips, for which he considered epidermis an inappropriate name. Now extended to the thin membrane which covers the mucous membranes wherever they exist.

Epizootic, or **Epizootic Disease,** a disease that at some particular time and place attacks great numbers of the lower animals, just as an epidemic attacks man. Pleuro-pneumonia is often an epizootic, as was also the rinderpest.

Epoch, or Era, in history, a fixed point of time, commonly selected on account of some remarkable event by which it has been distinguished, and which is made the beginning or determining point of a particular year from which all other years, whether preceding or ensuing, are computed. Some writers distinguish between the terms epoch and era. According to them, both mark important events, but an era is an epoch which is chronologically dated from; an epoch is not marked in this way. The birth of Christ was thus both an epoch and an era from this point of view.

The natives of America, previous to its discovery by Europeans, particularly the Peruvians and Mexicans, appear to have had a considerable acquaintance with astronomy and to have reckoned their time with great care. The Mexican year consisted of 365 days, composed of 18 months of 20 days, and 5 added days. At the end of a cycle of 52 years 12 and 13 days were added alternately, making the mean year very near the truth.

Epsom, a town in the County of Surrey, England, 15 miles S. W. of London, formerly celebrated for a mineral spring, from the water of which the well-known Epsom salts were manufactured. The principal attraction Epsom can now boast of is the grand race meeting held on the Downs, the chief races being the Derby and Oaks.

Epsom Salt, sulphate of magnesium, a cathartic salt which appears in capillary fibers or acicular crystals. It is found covering crevices of rocks, in mineral springs, etc.; but is commonly prepared by artificial processes from magnesian limestone by treating it with sulphuric acid, or by dissolving the mineral kieserite in boiling water, allowing the insoluble matter to settle, and crystallizing out the Epsom salt from the clear solution. It is employed in medicine as a purgative, and in the arts.

Epworth League, a society of young people of the Methodist Episcopal Church; formed May 15, 1889, in Cleveland, O., by the union of five societies affiliated with the Methodist Church. It adopted as its motto: "Look up, Lift up," and its declared object is to "promote intelligent and loyal piety in the young members and friends of the Church; to aid them in the attainment of purity of heart and constant growth in grace, and to train them in works of mercy and help." The following pledge is required of its members: "I will earnestly seek for myself, and do what I can to help others to attain, the highest New Testament standard of experience and life. I will abstain from all forms of worldly amusement forbidden by the Discipline of the Methodist Episcopal Church, and I will attend, as far as possible, the religious meetings of the chapter and the Church, and take some active part in them." The league is governed by a board of control, partly appointed by the bishops and partly elected by the General Conference districts, one member for each district; represented by an executive cabinet, consisting of a president, four vice-presidents, general secretary, general treasurer, and a German assistant treasurer. The league has grown rapidly, extending to foreign lands, and there are chapters in India, Mexico, South America, Italy, Norway, Sweden, Denmark, Finland, China, Japan, and Hawaii. The official report for Oct. 1, 1900, showed 27,700 chapters, and an aggregate membership of 1,100,000. Its official organ is the "Epworth Herald," published in Chicago.

Equator, an imaginary great circle of the celestial vault or on the surface of the earth.

In Astronomy.— A great circle of the celestial vault at right angles to its axis, and dividing it into a northern and a southern hemisphere. It is constituted by the plane of the earth's equator, produced in every direction till it reaches the concave of the celestial sphere. In his progress north and south, and vice versa, the sun is twice a year in the celestial equator — viz., at the Equinoxes. The point in the equator which touches the meridian is raised above the true horizon by an arc which is the complement of the latitude. The sun and planets all have equators. They rotate around their several axes, and the plane at right angles in each case is the equator of the heavenly body.

In Geography.— A great circle on the surface of the earth equidistant from its poles, and dividing it into two hemispheres. Its latitude is zero; it is therefore marked on maps as 0. Other parallels of latitude are counted from it, augmenting in their numerical designation as their distance from it north or south increases, the poles being 90°. The plane of the equator is a plane perpendicular to the earth's axis and passing through its center.

In Magnetism.— A somewhat irregular line, nearly but not quite a great circle of the earth, in which there is no dip of the magnetic needle. It is hence called also the aclinic line. It is inclined to the horizon at an angle of 12°, and cuts it at two points almost exactly opposite to each other, the one in the Atlantic and the other in the Pacific. It is not far from the geographical equator, but its situation slowly alters year by year, there being a slow oscillation of the magnetic poles, while the geographical equator and poles are fixed. The two points in which the magnetic equator cuts the horizon seem traveling at present from E. to W.

Equatorial, an astronomical instrument designed to note the course of the stars as they move through the sky.

Equatorial Current, a current in the ocean which crosses the Atlantic from Africa to Brazil, having a breadth varying from 160 to 450 nautical miles. Its waters are cooler by 3° or 4° than those of the ocean under the line. Its effect, therefore, is to diminish the heat of the tropics.

Equestrian Order, the order of knights in ancient Rome. The equites or knights originally formed the cavalry of the army. They are said by Livy to have been instituted by Romulus, who selected 300 of them from the three principal tribes. About the time of the Gracchi (123 B. C.) the equites became a distinct order in the State, and the judges and the farmers of the revenue were selected from their ranks. They held their position in virtue of a certain property qualification, and toward the end of the republic they possessed much influence in the State. They had particular seats assigned to them in the circus and theater, and the insignia of their rank, in addition to a horse, were a gold ring and a robe with a narrow purple border. Under the later emperors the order disappeared from the stage of political life.

Equilibrium, a state of equipoise, produced by the mutual counteraction of two or more forces; as the state of the two ends of a lever or balance, when both are charged with equal weight. When a body, being slightly moved out of any position, always tends to return to its position, that position is said to be one of stable equilibrium; when the body will not thus return to its previous position, its position is said to be one of unstable equilibrium.

Equinia, a disease produced in man when he is infected by a glandered horse.

Equinoctial, the same as the celestial equator. The equinoctial points are those in which the equinoctial and the ecliptic intersect. Equinoctial time is time reckoned from the moment in each year when the sun passes the vernal equinox. This instant is selected as a convenient starting-point of a uniform reckoning of time for the purposes of astronomical observers.

Equinoctial Gale, a gale popularly supposed to occur at the time of the spring or autumn equinox. Long-continued observations, however, are decisive against this popular belief.

Equinox, in astronomy, either one of the two points at which the sun, in its annual apparent course among the stars, crosses the equator; so called because the days and nights are nearly equal when the sun is at these points. The vernal equinox occurs about March 20. When but one equinox is referred to, vernal equinox is meant. The autumnal equinox occurs about Sept. 23. It takes the sun seven or eight days longer to go from vernal to autumnal equinox than from autumnal to vernal. The term equinox is often used to denote the time or epoch at which the sun is at the equinoctial point, as well as the point itself.

Equinoxes, Precession of the, the motion of the equinoxes along the ecliptic due to the change in the direction of the earth's axis of rotation, caused by the attraction of the moon and sun on the protuberant equatorial ring of the earth.

Equity, in law, the system of supplemental law administered in certain courts, founded on defined rules, recorded precedents, and established principles, the judges, however, liberally expounding and developing them to meet new exigencies. While it aims to assist the defects of the common law, by extending relief to those rights of property which the strict law does not recognize, and by giving more ample and distributive redress than the ordinary tribunals afford, equity by no means either controls, mitigates, or supersedes the common law, but rather guides itself by its analogies, and does not assume any power to subvert its doctrines. Courts of equity grant redress to all parties where they have rights, and modify and fashion that redress according to circumstances. They bring before them all the parties interested in the subject-matter of the suit, and adjust the rights of all.

Equity of Redemption, in law, the advantage allowed to a mortgagor of a reasonable time to redeem an estate mortgaged, when it is of greater value than the sum for which it is mortgaged.

Erard, Sebastien, a French musical instrument-maker; born in Strasburg, April 5, 1752. He is chiefly famous for his improvements and inventions in connection with the pianoforte and harp. He constructed his first pianoforte, one of the earliest made in France, in 1776 or 1777. He was the inventor of the harp with double pedals, and he also improved the sound-body of the instrument. The pianoforte with double escapement was likewise invented by Erard. He died near Passy, Aug. 5, 1831.

Erasistratus, an ancient Greek physician, said to have been grandson of Aristotle; he lived in the 3d century B. C. He was court physician of Seleucus Nicator, King of Syria, and was the first who systematically dissected the human body; his description of the brain and nerves is much more exact than any given by his predecessors. He classified the nerves into nerves of sensation and of locomotion, and it is said had almost stumbled on the discovery of the circulation of the blood. Of his works only the titles and some fragments remain.

Erasmus, Desiderius, a Dutch scholar; born Rotterdam in 1467. His original name was Gerard. In 1492 he traveled to Paris to perfect himself in theology and polite literature. A rich Englishman there, one of several whom he was instructing, Lord Montjoy, pensioned him for life. He accompanied these pupils to England and was graciously received by the king. He died in 1536. His tomb may be seen at Basel, in the Calvinistic cathedral.

To profound and extensive learning Erasmus joined a refined taste and a delicate wit. Naturally fond of tranquillity and independence, he preferred the pleasure of literary ease and retirement to the pomp of high life. He did great and lasting service to the cause of the revival of learning. Though he took no direct part in the Reformation, was reproached by Luther for lukewarmness, and acknowledged implicitly his lack of courage, he attacked the disorders of monasticism and the prevalent superstitions, and everywhere promoted the cause of truth. He wished for a general ecclesiastical council, to be composed of the most learned and enlightened men, but had not the satisfaction of seeing his wish accomplished.

Erato, in Greek mythology, one of the Muses, whose name signifies loving or lovely. She presided over lyric and especially amatory poetry, and is generally represented crowned with roses and myrtle, and with the lyre in the left hand and the plectrum in the right in the act of playing.

Eratosthenes, a Greek astronomer; born in Cyrene, Africa, B. C. 276. He was librarian at Alexandria, and gained his greatest renown by his investigation of the size of the earth. He rendered much service to the science of astronomy, and first observed the obliquity of the ecliptic. Of the writings attributed to him, one only, treating of the constellations, remains complete. He died about B. C. 194.

Erben, Henry, an American naval officer; born in New York in September, 1832; was graduated at the United States Naval Academy in 1854; promoted master, Sept. 16, 1855; lieutenant, April 2, 1856; lieutenant-commander, July 16, 1862; commander, May 6, 1868; captain, Nov. 1, 1879; commodore, April 3, 1892; rear-admiral in 1894; and was retired in the latter year. During the Civil War he served with Admiral Farragut in the Gulf of Mexico, and on the Mississippi river with Admiral Dupont, etc. In 1863-1869 he was on duty in South America; later, when in command of the "Tuscarora," he made deep-sea soundings in the Pacific; afterward commanded the "Pensacola" in a trip round the world; and in 1891-1892 was commandant of the New York Navy Yard.

Ercildoune, Thomas of, (called the Rhymer, and Learmont), a Scotch poet and seer, who flourished probably between 1220 and 1297, and wrote a poem called "Sir Tristrem." He occupies a very conspicuous position in the annals of Anglo-Saxon literature.

Ercilla y Zuniga, Alonso de, a Spanish poet; born in Bermeo, Aug. 7, 1533. He served against the Araucanian natives of Chile, and wrote a historico-epical poem, "The Araucanian Woman," in 37 cantos, which apart from a few episodes is a faithful narrative of what he saw. In its portraiture of character it is admirable, and in its literary form it is classical. Cervantes in "Don Quixote" ranks it with the finest of the Italian epics. He died in 1595.

Erckmann, Emile, a French novelist; born in Pfalzburg, in 1822; died in Paris, March 14, 1899.

Erdmann, Johann Eduard, a German philosopher; born in Wolmar, Livonia (Russia), in 1805. He studied at Dorpat and Berlin, coming, at this last university, under the influence of Hegel, and became Professor of Philosophy at Halle in 1839. He died in 1892.

Erebus, one of the sons of Chaos. The name signifies darkness, and is used specially to denote the dark and gloomy cavern beneath the earth, through which the shades pass in going to Hades.

Erebus, Mount, an active volcano on Victoria Land, rising 12,367 feet above the sea. It was discovered in 1841 by Ross, who named it after one of his vessels, and whose further progress S. was barred by a wall of ice.

Erechtheus, or **Erichthonius,** an Attic hero, who was the chief means of establishing the worship of Athena in Attica. He instituted the Panathenæa, and a temple, the Erechtheum, was erected in his own honor. This original Erechtheum was burned by the Persians, but a new and magnificent Ionic temple was raised on the same site. He was said to have been the son of Hephæstus and Atthis.

Erfurt, an important town in the Prussian Province of Saxony, on the river Gera, formerly a fortress with two citadels, now given up as such. It has a fine cathedral dating from the 13th century and several handsome Gothic churches. The university, founded in 1378 and suppressed in 1816, was long an important institution. There are still a Royal Academy of Science and a Royal Library with 60,000 volumes. The monastery (now an orphanage) was the residence of Luther from 1501 to 1508. Pop. (1900) 85,190.

Ergot, the altered seed of rye and other grasses caused by the attack of a fungus. The seed is replaced by a dense homogeneous tissue largely charged with an oily fluid. In its perfect state this germinates and produces the claviceps. When diseased rye of this kind is eaten in food for some time, it sometimes causes death by a kind of mortification called dry gangrene.

Ergotism, an affection produced by the use of spurred rye.

Eric, the name of several Danish and Swedish kings. Eric VIII., the Saint, became King of Sweden in 1155, did much to extend Christianity in his dominions, and to improve the laws, and fell in battle with the Danes in 1160. Eric XIV., the last of the name who reigned in Sweden, succeeded in 1560 to the throne of his father, the great Gustavus Vasa, and at once began to exhibit the folly that disgraced his reign. His flighty matrimonial schemes reached even Elizabeth of England and Mary of Scotland, till at length (1567) his roving fancy found rest in the love of a Swedish peasant-girl, who acquired an influence over him which was ascribed by the superstitious to witchcraft; she alone was able to control him in the violent paroxysms of blind fury to which he was subject. His capricious cruelties and the disastrous wars that followed on his follies at length alienated the minds of his subjects, who threw off their allegiance in 1568 and elected his brother John to the throne. In 1577 he ended his miserable life half voluntarily by a cup of poison. This crazy madman had a genuine love of letters, and solaced his captivity with music and the composition of psalms.

Erichsen, Sir John Eric, a Britsh surgeon; born July 19, 1818, his ather being a Copenhagen merchant. n 1887 he was appointed president of Jniversity College. In 1875 he served n the Royal Commission on Vivisecion, and later he was chief surgeonxtraordinary to the queen. He died Sept. 23, 1896.

Ericsson, John, an American inentor; born in Sweden, July 31, 803; entered the Swedish army in 820; was promoted captain; resigned n 1827. He soon became known as n inventor. In 1828 he made the rst application to navigation of the rinciple of condensing steam and reurning the water to the boiler; later e brought out a self-acting gunlock y means of which naval cannon could e automatically discharged at any levation without regard to the rollng of the ship. In 1833 he designed caloric engine; and in 1836 invented ne screw propeller, which revolutioned navigation. Ericsson came to the nited States in 1839 and two years ter built the screw-propelling warhip "Princeton" for the government. his vessel was the pioneer of modrn naval construction and the founation of the steam marine of the orld. The achievement, however, hich made him most famous in the nited States was the construction in 861 of the ironclad "Monitor," hich was launched 100 days after its eel was laid, and which arrived in ampton Roads just in time to deat, on March 9, 1862, the Confederte ironclad "Merrimac," which had estroyed several wooden warships. ut for this signal victory the result the war might have been changed nd European interference attempted. fleet of monitors was soon built and d important service during the reainder of the war. Ericsson died in ew York city, March 8, 1889. After s remains had been paid marked nor, they were sent back to Sweden the new cruiser "Baltimore." A atue was erected to Ericsson with posing ceremonies in Battery Park, ew York, in 1903, and a torpedo boat named after him.

Erie, city, port of entry, and unty-seat of Erie co., Pa., on Lake rie, and on the Lake Shore, the nnsylvania, the Erie, and several other railroads; 85 miles S. W. of Buffalo; 100 miles N. E. of Cleveland. Erie occupies the site of a French fort. called Fort de la Presque, built in 1749; was laid out as a town in 1795; had a portion incorporated as a borough in 1805; and the whole was given a city charter in 1851. It was the headquarters of Commodore Perry in the War of 1812; the fleet with which he defeated the British in the battle of Put-in-Bay was built and equipped here. Natural gas was discovered in 1889. Pop. (1890) 40,634; (1900) 52,733.

Erie Canal, the largest artificial waterway in the United States, serving to connect the great lakes with the sea. It begins at Buffalo on Lake Erie, and extends to the Hudson at Albany. It is 387 miles long; has in all 72 locks; a surface width of 70 feet, bottom width of 42 feet, and depth of 7 feet. It is carried over several large streams on stone aqueducts; was opened in 1825; and up to 1901 had cost for construction, enlargement, and maintenance $52,540,800. In November, 1903, the people of New York vote on the question of the enlargement of the canal to accommodate one-thousand-ton barges.

Erie, Lake, one of the great chain of North American lakes, between Lakes Huron and Ontario, about 265 miles long, 63½ miles broad at its center, from 200 to 270 feet deep at the deepest part; area, 9,600 square miles. The whole of its S. shore is within the territory of the United States, and its N. within that of Canada. It receives the waters of the upper lakes by Detroit river at its N. W. extremity, and discharges its waters into Lake Ontario by the Niagara river at its N. E. end. The Welland Canal enables vessels to pass it from it to Lake Ontario.

Erie, Lake, Battle of. In the War of 1812, between the United States and Great Britain, each party tried to gain possession of Lakes Erie and Ontario as a theater for warlike operations. The chief command of the naval forces on Lake Ontario was held by Commodore Chauncey, and that on Lake Erie by Master-Commandant Oliver Hazard Perry, of Rhode Island, then only 27 years old. Perry fitted out a squadron of seven vessels at

Erie, and succeeded in running the British blockade early in August, 1813. On Sept. 10 following he engaged in a fight in Put-in-Bay, near the W. extremity of the lake, with the British squadron of 6 vessels, mounting 63 guns. A fierce battle was waged for several hours, in the early part of which Perry's flagship, the "Lawrence," was completely disabled and struck her flag. He immediately shifted his flag to the "Niagara," and continued in action, finally defeating the British and establishing American supremacy on the lakes.

Erigena, Joannes Scotus, an eminent scholar and metaphysician; probably born in Ireland about 800–810. He spent a great part of his life at the court of Charles the Bald of France, and was placed at the head of the school of the palace. He died in France about 875.

Erin, an old name for Ireland. Now used only in poetry.

Erlangen, a town of Bavaria, on the Regnitz, 12 miles N. of Nuremberg. As old as the 10th century, it owes its prosperity to the settlement here of French Huguenots after the revocation of the Edict of Nantes (1685), and to its university (1743), which is celebrated as a school of Protestant theology, and attended by from 600 to 900 students.

Ermine, an animal found in the N. parts of Europe, Asia, and America in great abundance; but it occurs even in the Middle United States, and also in the temperate parts of Europe. In some parts of Canada ermines are very abundant. During the winter its color is light, closely resembling that of the snow. In its summer dress it is of a light ferruginous or chestnut-brown color over the head, back, sides, and upper half of the tail; the under part is nearly pure white; the lower portion of the tail becomes gradually darker, till at the extremity it is quite black. Its fur is short, soft, and silky. In its winter coat it is of a pure white over the whole head, body, and limbs, the lower half of the tail alone retaining its dark hue. The fur at this time is much longer, thicker, and finer than in summer. The fur of the ermine is in great request; it was formerly one of the insignia of royalty, and is still worn by judges. When used in this way the black tuft from the tail is commonly sewed to the skin at irregular distances. This animal is not readily tamed; when caught, and kept in a cage, it exhibits every mark of its fierce and savage character.

Erne, one of the "bare-legged" eagles. The genus includes some seven species, represented apparently in all parts of the world except South America. A notable species is the white-headed or bald eagle, the emblem of the United States. This erne is common in North America, both by the coasts and by inland lakes, and also occurs in Northern Europe. The general color is brown, but the head and neck of the adults are milky-white, and the same is true of the rounded tail.

COMMON ERNE.

Ernesti, Johann August, a celebrated classical and Biblical critic; born in Tennstadt, Thuringia, Aug. 4, 1707. He was the founder of a true exegesis of Scripture by the laws of grammar and history, independent of dogmatic prepossessions. He died Sept. 11, 1781.

Ernst, August Frederic, an American educator; born in Hanover, Germany, June 25, 1841; was graduated at the gymnasium, Celle, Hanover, in 1859; later studied at the University of Gottingen; came to the United States in 1863; and was pastor of Lutheran congregations till 1869, when he became a professor in the Northwestern University. He was chosen president of the university in 1870; and was president of the Joint Lutheran Synod of Wisconsin, Minnesota, and Michigan, in 1892, 1895, 1897, and 1899.

Ernst, Harold Clarence, an American educator; born in Cincinnati, O., July 31, 1856. He was graduated at Harvard University in 1876 and at its Medical School in 1880; and later became Professor of Bacteriology at that place.

Ernst, Henry, an American educator; born in Anspach-Uringen, Germany, May 17, 1842; educated in Germany and in the United States; was graduated at Concordia Seminary, St. Louis, Mo., and at the Capital University, Columbus, O. He entered the Lutheran ministry in 1865, and remained actively in it till 1885, when he became president and Professor of Theology in the Lutheran Theological Seminary, St. Paul, Minn.

Ernst, Oswald Herbert, an American military officer; born near Cincinnati, O., June 27, 1842; was graduated at the United States Military Academy and appointed a first lieutenant in the Corps of Engineers in 1864; promoted to lieutenant-colonel, U. S. A., in 1895; and commissioned a Brigadier-General of volunteers May 27, 1898. In 1893–1898 he was superintendent of the United States Military Academy. In the war with Spain he went with General Miles to Porto Rico in July, 1898, and on Aug. 9 led the troops in the action at Coamo.

Erosion Theory, a theory or hypothesis which attributes the excavation of lakes chiefly to the erosive power of water in the form of glaciers, instead of regarding them as due to the existence in the spots where they occur of cracks or fissures in the strata.

Erostratus, or **Herostratus,** a Greek enthusiast; born about 376 B. C., whose longing for fame prompted him to set fire to the temple of Diana at Ephesus. The deed was done on the night Alexander the Great was born. Erostratus has been spoken of as "the youth who fired the Ephesian dome," and nothing else regarding him is known.

Erratics, or **Erratic Blocks,** in geology, boulders or large masses of angular rock which have been transported to a distance from their original mountains by the action of ice during the glacial period. Thus on the slopes of the Jura Mountains immense blocks of granite are found which have traveled 60 miles from their original situation.

Error, a wandering or deviation from what is true or right. In astronomy, the difference between the positions of any of the heavenly bodies as determined by calculation and by observation; in law, a mistake in the proceedings of the court of record on matters of law, entitling the party grieved to have the case reviewed; in mathematics, the difference between the result arrived at by any operation and the true result; in horology the difference between the time to which a clock really points and that which it was intended to indicate. Writ of error, in law, an appeal from an inferior court of record assigning error in the proceedings; it lies only upon matter of law arising upon the face of the proceedings, so that no evidence is required to substantiate or support it.

Ersch, John Samuel, a German bibliographer; born in 1766. He was principal librarian and Professor of Geography and Statistics at Halle. He died in 1828.

Erskine, Ebenezer, the founder of the Secession Church in Scotland; born in 1680. His attitude toward patronage and other abuses in the Church led to his being deposed, when, in conjunction with his brother and others, he founded the Secession Church. He is the author of several volumes of sermons. He died in 1756.

Erskine, Thomas, a Scotch baron; born in Edinburgh, Jan. 21, 1750; became a noted forensic orator and jurist, attaining most of his renown as a pleader in support of the accusations of corruption made against Lord Sandwich. He was a member of the House of Commons in 1790–1806. About the latter date he was created Baron Erskine of Restormel, on becoming lord-chancellor. He died near Edinburgh, Jan. 21, 1823.

Erysipelas, a peculiar inflammation of the skin spreading with great rapidity; the parts affected are of a deep red color, with a diffused swelling of the underlying cutaneous tissue and cellular membrane, and an indisposition to take on healthy action. It is called by John Hunter the adhesive inflammation. Erysipelas is divided into: (1) Simple, where the skin only is affected; (2) Phlegmonous, where the cutaneous and areolar tissue are both attacked at the same time, going on to vesication, then yellowness, and death of the skin; death of the areolar tissue may follow, constituting malignant or gangrenous erysipelas; (3) Œdematous, or sub-cutaneous, of a yellowish, dark brown, or red color, occurring about the eyelids, scrotum, or legs, usually in broken-down dropsical constitutions. The first is superficial and sthenic, the other forms more deep-seated and asthenic, and require vigorously active treatment by free incisions before the formation of pus, as it is too late to wait till pus has actually formed.

Erythema, uniform redness, with puffiness of the skin, seldom accompanied by general febrile disturbance, and not extending to the areolar tissue. The redness and bumps gradually subside. It is commonest in young females, but is also seen in feeble boys. It is often a symptom of some other disease, as in measles or scarlatina.

Erythræan Sea, in ancient geography, a name given to what is now called the Indian Ocean, but including the Persian and Arabian gulfs. The name was latterly restricted to the Arabian Gulf.

Eryx, an ancient city and a mountain in the W. of Sicily, about 2 miles from the sea-coast. The mountain, now Monte San Giuliano, rises direct from the plain to a height of 2,184 feet. On the summit anciently stood a celebrated temple of Venus. All traces of the ancient town of Eryx have now disappeared, and its site is occupied by the modern town of San Giuliano.

Erzerum, an important town in Turkish Armenia, not far from Kara Su, or W. source of the Euphrates It is situated on a high but tolerably well cultivated plain, 6,200 feet above the level of the sea, surrounded by mountains. The climate is cold in winter, but hot and dry in summer Erzerum is the residence of English Russian, German, and French consular agents; and its population is estimated at 40,000, consisting of 30,000 Turks, 8,000 Armenians, and 2,000 Persians, who carry on a brisk trade and have thus attained a degree of prosperity unusual in the East. In November, 1901, an earthquake destroyed over 1,000 houses, with a small loss of life.

Esarhaddon, the son of Sennacherib, and one of the most powerful of all the Assyrian monarchs. He extended the empire on all sides, and is the only Assyrian monarch who actually reigned at Babylon. He died about 667 B. C.

Esau, the eldest son of Isaac, and twin brother of Jacob. His name (which signifies rough, hairy) was due to his singular appearance at birth, being "red, all over like an hairy garment." The story of his marriage, of his loss of birthright through the craft of Rebekah and Jacob, and of his quarrel and reconciliation with Jacob, are told in the book of Genesis.

Escanaba, a city of N. Michigan, on Green Bay. It is an important iron ore shipping point.

Escapement, a device intervening between the power and the time measurer in a clock or watch, to convert a continuous rotary into an oscillating isochronous movement. It is acted on by each. The power, through the escapement, imparts to the pendulum or balance wheel an impulse sufficient to overcome the friction of the latter and the resistance of the atmosphere, and thus keeps up the vibrations. The time-measurer (pendulum or balance wheel) acts through the escapement to cause the motion of the train to be intermittent. Clocks and watches are generally named according to the form of their escapement; as, chronometer, crown wheel, cylinder, deadbeat, detached, duplex, horizontal, and lever escapement, etc.

Eschar, a slough or portion of dead r disorganized tissue. The name is ommonly applied to the crust or seal ccasioned on the skin by burns or austic applications.

Escheat, in law, a species of re- ersion arising from default of heirs r by forfeiture. That which falls or apses to the original proprietor, or to he State, as lands or other property. y modern legislation there can be no scheat on failure of the whole blood herever there are persons of the half- lood capable of inheriting.

Eschenbach, Wolfram von, a erman mediæval poet; born of a oble family in Eschenbach, near Ans- ach, Bavaria, in the second half of he 12th century. He was one of the ost prominent minstrels at the court f Hermann, Landgraf of Thuringia; nd his epics rank among the greatest erman imaginative works. He died etween 1218 and 1225.

Escurial, a royal palace of Spain, istant from Madrid about 24 miles, . W. on the acclivity of the Sierra uadarrama, the range of mountains hich divides New from Old Castile. he Escurial is not a mere palace, but memorial building, and combines monastery, a church, and a mauso- um with a royal palace. Everything bout the Escurial — situation, plan, nd purposes — bears the stamp of he singular and unpractical mind of s originator, Philip II. Not the least emarkable of its peculiarities is its te. Away from cities, amid the se- usion of mountain scenery, it stands t a height of 2,700 feet above the vel of the sea.

It was built by Philip II. in com- emoration of the battle of St. Quen- n. This battle was fought on the stival of St. Lawrence, Aug. 10, 557, and the Escurial was built in onor of the saint, in consequence, it said, of a vow made by Philip pre- ous to the battle. In carrying out is vow Philip had the whimsical no- on of making the Escurial resemble he instrument of torture wherewith, ccording to legend, St. Lawrence was artyred — a gridiron. The building a rectangular parallelogram meas- ring 744 feet in length by 580 in readth. The interior is divided into ourts which represent the intersections of the bars of the gridiron; while a projection 460 feet in length, representing, as has been said, the handle, contains the chapel and the royal palace. The building was begun in 1563 by Juan Bautista de Toledo, a Toledan architect, and finished in 1584 by his pupil, Juan de Herrera. It is irregular in its proportions, and thus loses much of the effect which from its great magnitude it ought to have. "The height," says Roscoe, "is 51 feet 8 inches to the cornice by exact measurement (less than a 14th of its length), which gives it the appearance rather of the side of a street than of the facade of a palace." At the extremities are towers 200 feet high, supposed to represent the feet of the gridiron, and the cupola of the church has a height of 320 feet. It is to these features that the building owes an imposing architectural appearance. The innumerable windows (said to be 11,000 in honor of the Cologne virgins) give it the aspect of a large mill or barrack. The doors are also numerous. The material of the building is gray granite found in the neighborhood, which preserves its fresh and clean appearance. The church, situated immediately in front of the palace, is 320 feet long and 230 broad; and under it is the Pantheon or burying place of the Kings of Spain. Its interior is lined with dark marble beautifully veined. The monasterial part of the building contains a valuable library, especially rich in Greek and Arabic manuscripts, and there is a superb collection of pictures scattered through various parts of the building. Raphael, Titian, Rubens, Velasquez, Guido, and other great masters are here represented. During the French occupation the books, 30,000 in number, were removed to Madrid, but were sent back by Ferdinand minus 10,000 volumes. The Escurial was partly burned in 1671, when many MSS. were destroyed. It was pillaged by the French in 1808 (when the books were removed) and in 1813. It was restored by Ferdinand VII., but the monks, with their revenues which supported it, have long since disappeared, and the building, which from its situation requires to be kept in repair at considerable expense, has fallen into some decay, though repairs are executed from time to time. On Oct. 2, 1872, it was struck by lightning, and was in consequence seriously injured by fire. The monastery portion of it is now a seminary.

Esk, (Celtic for water), the name of two small rivers in England, one in Cumberland and one in Yorkshire; and of several in Scotland, the chief being the Esk in Dumfriesshire; the North Esk and South Esk in Forfarshire; and the North Esk and South Esk in Edinburghshire.

Escutcheon, in heraldry, the shield whereon coats of arms are represented.

Esdraelon, Plain of, a plain extending across Palestine from the Mediterranean to the Jordan, and drained by the river Kishon. This plain is celebrated for many important events in Old Testament history.

Esdras, Books of, two apocryphal books which, in the Vulgate and other editions, are incorporated with the canonical books of Scripture. In the Vulgate the canonical books of Ezra and Nehemiah are called the first and second, and the apocryphal books the third and fourth books of Esdras. The Geneva Bible (1560) first adopted the present nomenclature, calling the two apocryphal books first and second Esdras. The subject of the first book of Esdras is the same as that of Ezra and Nehemiah, and in general it appears to be copied from the canonical Scriptures. The second book of Esdras is supposed to have been either of much later date, or to have been interpolated by Christian writers.

Eskimo, the name of the inhabitants of the N. coast of the American continent down to lat. 60° N. on the W., and 55° on the E., and of the Arctic Islands, Greenland, and about 400 miles of the nearest Asiatic coast. Their tracks have been met with as far as Arctic discoverers have hitherto advanced toward the pole. They prefer the vicinity of the seashore, from which they rarely withdraw more than 20, and hardly ever 80 miles. Their number scarcely amounts to 40,000. Nevertheless they are scattered as the sole native occupants of regions stretching from E. to W. as far as 3,200 miles in a straight line, to travel between the extreme points of which would necessitate a journey of no less than 5,000 miles. This distance, taken in connection with their homogeneous nature and manners, makes their small bands the most thinly scattered people of the globe. Their extraordinary persistency in maintaining their language and habits must be due to the difficulties they have had to face in procuring subsistence where no other nation can live.

They used to be classed among nations of the Mongolian stock; but now they are considered as akin to the American Indians. Their height nearly equals the average of the N. W. Indians. They appear comparatively taller sitting than standing. Their hands and feet are small, their faces oval, but rather broad in the lower part; their skin is only slightly brown; they have coarse black hair and very little beard. Their skull is high.

ESKIMO MAN.

The Eskimos get their subsistence mostly from hunting by sea, using for this purpose skin boats where the sea is open, and dog sledges on the ice. From the skin, blubber, and flesh of the seal and the cetaceous animals they procure clothes, fuel, light, and food. Their most interesting as well s important invention for hunting is ne well-known small skin boat for ne man, called a kayak. It is formed f a frame-work covered with skin, nd, together with his waterproof cket, it completely protects the man gainst the waves, so that he is able rise unhurt by means of his paddle, ven should he capsize. A Greenland- 's kayak is almost 18 feet long and feet broad, and can carry 200 pounds esides the man. The special weapon the kayak is the large harpoon, onnected by a line with an inflated adder. The hunter throws it when ut 25 feet from the seal, and at once rops the bladder overboard, thus re- rding the speed of the wounded ani- al, which runs off with it till finally lled by a lance-thrust. In winter ne Eskimos are undoubtedly station- ry. But during the summer, when ufficient open water is found, they am about in their large skin boats, ne umiaks. Their winter dwellings ry with regard to the materials of hich they are built, as well as in eir form. In the farthest W. they e constructed mostly of planks, cov- ed only with a layer of turf or sod; Greenland the walls consist of ones and sod; in the central regions e houses are formed merely out of ow. In Alaska the interior is a uare room, surrounded by the eeping places, with the entrance on ne side, while a hearth with wood fuel occupies the middle of the oor. In Greenland the room is heat- only by lamps, and the sleeping aces or family stalls are arranged a row occupying one of its sides. ne house for this reason is lengthened oportionally to the number of its habitants. Nowadays, however, e houses are not made so long as rmerly — a curious fact correspond- g to the disuse of the Indian "long uses," and like it a result of con- ct with civilization. The number of habitants at an Eskimo station is nerally under 40, but in rare cases ore than 200 are found. A funnel- aped, half-underground passage rms the entrance of the narrow ellings.

The dress of the Eskimos is almost e same for the women as for the en, consisting of trousers or breeches d a tunic or coat fitting close to the body, and covering also the head by a prolongation that forms the hood. For women with children to carry, this hood is widened so as to make it an excellent cradle, the amaut. Tattooing has been general among all the tribes. The ordinary materials of which clothes are made are the skins of seals, land animals, and birds.

The language is characterized by the power of expressing in one word a whole sentence in which are embodied a number of ideas which in other languages require separate words. The Greenland dictionary contains 1,370 radicals and about 200 affixes. A radical may be made the foundation of thousands of derivatives, and a word can be composed which expresses with perfect distinctness what in our civilized languages might require 20 words. In Greenland and Labrador the missionaries have adapted the Roman letters for reducing the native language to writing. The printed Greenland literature, including what has been published by the Moravian Brethren, amounts, with pamphlets and the like, to what might make 70 to 80 ordinary volumes. The Labrador literature contains about 10 books.

It is doubtful whether an organization like that of the Indian "families" has been discovered among the Eskimos. But a division into tribes, each with their separate territories, actually exists. The tribe again is divided into groups constituting the inhabitants of the different wintering places. Finally, in the same station, the inhabitants of the same house are closely united with regard to common housekeeping. In this, and perhaps similar ways, their general communism in living, characteristic of their stage of culture, is governed by rules for partnership in householding, for distribution of the daily game during mates, and the placefellows. One of the individual, the family, the housemates, and the placefellows. One of the oldest and most respectable men, called in Greenland itok, in Labrador angajorkak, is obeyed as chief of a house or wintering place, though his authority perhaps, may rest on tacit agreement only. In a similar way, more or less public assemblies constitute councils, and may be considered the courts of justice. Social organization has been more highly developed in Alaska than in Greenland.

The inhabitants of Danish West Greenland, numbering about 10,000, the greater part of the Labradorians, and the Southern Alaska Eskimos are Christianized. As for the rest, the religion of the Eskimos is what is generally designated as Shamanism.

The name Eskimo is said to be formed by corruption out of an Indian word signifying "eaters of raw meat." They call themselves Inuit, in Greenland partly Kaladlit. Their origin generally has been derived from Asia, but now they are believed by some to have come from the interior of America, and, following the river courses, to have arrived at the Arctic sea, where they have developed their abilities as an Arctic coast people. The Eskimos may be divided into the following groups: (1) The Western Eskimos, inhabiting the Alaska territory and the Asiatic side of Bering Strait; (2) the Mackenzie Eskimos, or Tchiglits, from Barter Island to Cape Bathhurst; (3) the inhabitants of the central regions, including the Arctic Archipelago; (4) the Labradorians; (5) the Greenlanders. A side branch inhabits the Aleutian Islands.

Eskimo Dog, a species of dog used in the Arctic regions by the natives and by explorers as a beast of burden. It is a hardy and powerful animal, in form resembling the shepherd's dog, and has long hair, black and white, brown or dingy white. It retains much of the wildness of its wolf ancestors, but is invaluable to the inhabitants of the frozen North.

Esmarch, Johannes Friedrich August, a German military surgeon; born in Tonning, Schleswig-Holstein, in 1823. He received his medical and surgical education in the Universities of Kiel and Gottingen, was attached to the Kiel hospital in 1846, served through the Schleswig-Holstein War as army surgeon, and was taken prisoner with the greater part of the army, April 6, 1848. After being exchanged he was appointed surgeon to the hospital of Flensbourg, and in 1857 succeeded Stromeyer as director of clinical surgery; in 1860 he was appointed professor and director of the Kiel Hospital. In 1870 he was a member of the hospital commission of the Prussian army and introduced a system of bloodless operations. After the war he returned to his duties at Kiel University. In the autumn of 1888 he made a trip to the United States. He was an authority especially on gunshot wounds.

Esneh, a town of Upper Egypt, on the left bank of the Nile, 28 miles S. S. W. of Thebes, capital of a province of the same name, on the site of the ancient Latopolis. Among the ruins there is a beautiful portico of 24 lofty and massive columns belonging to a temple of Kneph (the only portion of the temple cleared out), and erected in the Ptolemaic and Roman period, with a zodiac on the ceiling. Esneh is the entrepot of the Senaar caravans; has manufactures of cottons, pottery, etc., and is reckoned the healthiest place in Egypt. Pop. 7,000.

Espartero, Baldomero, Duke of Vittoria, a Spanish statesman; born in 1792. The son of a wheelwright, he was educated for the priesthood, but joined the army as a volunteer in 1808. He took a leading part in the conflict with the Carlists, and was one of the most prominent men in Spain during the several decades of the 19th century. He was regent of the kingdom in 1841–1843, and again head of the government in 1854–1856. He was exiled in England from 1843 to 1847. In 1868 his name was put forward in the Cortes as a candidate for the throne, but the proposal fell flat; the closing years of his life were spent in retirement. He died in 1879.

Espiritu-Santo, the name of several islands. (1) In the Pacific, the largest of the New Hebrides, with about 20,000 inhabitants. (2) A small island in the Gulf of California. (3) A group of the Bahama islands.

Esplanade, in fortification, the wide open space left between a citadel and the nearest houses of the city. The term is also frequently applied to a kind of terrace, especially along the seaside, for public walks or drives.

Esquimault, a seaport and harbor of British Columbia, on the S. E. coast of Vancouver Island, and on the Strait of San Juan de Fuca; 4 miles from Victoria. The harbor is extensive and capable of receiving vessels of the greatest size, and is the British aval station for this part of the Pa- fic coast. It has a navy yard, ma- ne hospital, a large dry dock built by ie Dominion government in 1888, id a meteorological station. In 1894 ie British government started work i the defenses of Esquimault, con- sting of earthworks, with disappear- g guns, and two parapet forts on ie hills for protection against a pos- ble attack by land. The harbors of oth Esquimault and Victoria are ept thoroughly mined and wired, and onstitute one of the best defended aval stations in the world. The con- ruction of this great fortress has een criticised in the United States as idicating on the part of Great Brit- n an unfriendly feeling and appre- ension of trouble with America.

Esquire, originally, a shield-bearer r armor-bearer, an attendant on a night; hence, in modern times a title f dignity next in degree below a night. In England this title is given roperly to the younger sons of noble- en, to officers of the king's courts nd of the household, to counsellors t law, justices of the peace while in ommission, sheriffs, gentlemen who ave held commissions in the army and avy, etc. It is usually given to all rofessional and literary men, and owadays, both there and in the Unit- l States in the addresses of letters squire may be put as a compliment- ry adjunct to almost any person's ame. In heraldry the helmet of an squire is represented sideways with ie visor closed.

Esquiros, Henri Alphonse, a rench writer; born in Paris in 1814. ied in Versailles in 1876.

Essay, a composition in which some- ing is attempted to be proved or il- istrated, usually shorter and less ethodical and finished than a sys- ematic or formal treatise. Caution r modesty has induced many writers f note to give the title of essay to ieir most elaborate productions.

Essen, a town of Rhenish Prussia, 3 miles N. E. of Dusseldorf, founded i the 9th century, and adorned with fine church dating from 873. It has ecently increased with great rapidity, nd is celebrated for the steel and iron orks of the Krupps, the most ex- ensive in Europe, employing in all 1900) about 75,000 workmen. This great establishment was started in 1827, with only two workmen. The rifled steel cannon made here are supplied to most of the armies of Europe. In the suburbs are the "colonies"— cottages, churches, schools, stores, libraries, places of amusement, homes for superannuated and disabled workmen, etc., established by the Krupps for their workmen. Pop. (1900) 118,863.

Essence, in philosophy, originally the same as substance. Later, substance came to be used for the undetermined substratum of a thing, essence for the qualities expressed in the definition of a thing; or, as Locke put it, "Essence may be taken for the very being of a thing, whereby it is what it is." In chemistry, and in popular parlance, essences are solutions of the essential oils in alcohol, and may be prepared by adding rectified spirit to the odoriferous parts of plants, or to the essential oils, and distilling; or simply by adding the essential oil to the rectified spirit, and agitating till a uniform mixture is obtained. The term has, however, received a wider significance, and is applied to any liquid possessing the properties of the substance of which it professes to be the essence. Thus essences of coffee, beef, and rennet contain in a concentrated form the virtues of coffee, beef, and rennet, and in some circumstances may be substituted for them.

Essenes, or **Essæans,** a sect among the Jews, the origin of which is unknown, as well as the etymology of their name. It appears to have sprung up in the course of the century preceding the Christian era, and disappeared on the dispersion of the Jews after the siege of Jerusalem.

Essential Oils, volatile oils usually drawn from aromatic plants by subjecting them to distillation with waters, such as the oils of lavender, cloves, peppermint, etc.

Essequibo, a river of British Guiana, which flows into the Atlantic by an estuary 20 miles in width after a course of about 450 miles.

Essex, Robert Devereux, 2d Earl of, eldest son of the 1st earl; born in Netherwood, Herefordshire, Nov. 10, 1567, a favorite of Queen Elizabeth, who afterward turned against him. He was tried for treason Feb. 19, and executed Feb. 26, 1601.

Estaing, Charles Hector, Comte d', a French army and navy officer; born in 1729. In 1763 he was appointed Lieutenant-General, and in 1777 vice-admiral in the French navy. In 1778, in accordance with the treaty between France and the United States, France fitted out a fleet of 12 ships of the line and 4 frigates to aid the latter in the struggle against Great Britain, and Estaing was placed in command. He sailed April 13, reached Delaware Bay in July, and then proceeded to New York, expecting to encounter the British fleet on the way. He captured some prizes off the coast of New Jersey, agreed to assist in a land and sea attack on Newport to expel the British from Rhode Island; reached the harbor late in July; and hearing of the approach of a fleet, put to sea to meet it. He was overtaken by a severe storm, which caused him to put into Boston for repairs, and the projected attack failed. Subsequently he captured St. Vincent and Grenada, West Indies, and in 1779 coöperated with General Lincoln in an ineffectual attempt to capture Savannah, Ga. He returned to France in 1780; chosen admiral of the navy in 1792; testified in favor of Marie Antoinette at her trial in 1793; and, despite his eminent military and naval services to France, was condemned as a royalist and guillotined in 1794.

Estancia, an estate or farm in Spanish South America, especially one on which cattle are reared.

Estate, the interest or quantity of interest a man has in lands, tenements, or other effects. Estates are real or personal. Real estate comprises lands, tenements, and hereditaments, held in freehold. Personal estate comprises interests for terms of years in lands, tenements, and hereditaments, and property of every other description. In ordinary language, an estate is a piece of landed property; a definite portion of land in the ownership of some one.

Este, a town in the Province of Padua, Italy, 17 miles S. W. of Padua; the ancient Adeste. Pop. about 6,000. Also one of the most ancient and illustrious families of Italy. In the 11th century the house of Este became connected by marriage with the German Welfs or Guelphs, and founded the German branch of the house of Este, the dukes of Brunswick and Hanover. The last male representative of the Estes died in 1798. His daughter married a son of the German Emperor Francis I., who founded the Austrian branch of the house of Este, of which the male line became extinct in 1875.

Esterhazy, a family of Hungarian magnates, whose authentic genealogy goes back to the first half of the 13th century. They were zealous partisans of the house of Hapsburg, to whom, during the reigns of Frederick II. and Leopold I., they lent a powerful support. Among the more prominent members of the family are: Paul IV., Prince Esterhazy, a general and literary savant, 1635-1713. His grandson, Nicholas Joseph, a great patron of arts and music, founder of the school in which Haydn and Pleyel, among others, were formed, 1714–1790. Nicholas, Prince Esterhazy, distinguished as a field marshal and foreign ambassador, 1765–1833. Prince Paul Anthony, a distinguished and able diplomatist; born 1786; was successively Austrian ambassador at Dresden, Rome, and Britain; a supporter of the National Hungarian movement. He died in 1866.

Esterhazy, Marie Charles Ferdinand Walsin, born in Austria, Dec. 16, 1847; served in a regiment of Papal Zouaves during the latter part of the French empire; was promoted lieutenant in 1878; captain in 1879, and commander, a rank equivalent to major in other armies, in 1892, in the early part of 1897 he was retired from the army and went to Italy in broken health. He became known throughout the civilized world through his connection with the trial of Capt. Alfred Dreyfus, whom he accused as being the writer of the famous "bordereau" which was alleged to have been sent to certain German military officers revealing French military secrets. In December, 1894, Dreyfus was tried by court martial and convicted as the author of the document, and on January 5, of the following year was publicly degraded and a little later sent as a prisoner to Devil's Island.

1 1896, Colonel Picquart, the head of ıe Intelligence Bureau of the War ffice, made certain discoveries which ointed to Major Esterhazy as the au- ıor of the "bordereau." These dis- overies led to further investigation nd Dreyfus was brought from his rison and given a new trial in 1899, ut was again convicted, although uch of the evidence gathered pointed Esterhazy as the real traitor. So rong did this opinion become that sterhazy was compelled to leave rance, and it was alleged that he ıd hidden in London and had been educed to extreme poverty.

Esther, a Jewess who became the ıeen of Ahasuerus, King of Persia, ıd whose story is told in the book the Old Testament called by her ıme. This book is supposed by some be the composition of Mordecai him- ılf, the uncle of the heroine. The ast of Purim which commemorates ıe events narrated is still observed by ıe Jews. Various opinions are held garding the time of the story.

Estienne, or **Etienne, Robert,** a rench printer and scholar; born in aris, in 1503. In 1526 he established printing house in Paris and in 1539 as appointed royal printer to Francis He removed to Geneva about 1552. e published many editions of the reek and Latin classics and com- led numerous other works. He died Geneva, Sept. 7, 1559. His son enri took up his father's work on ıe death of the latter and was also writer of note. He died in Lyons 1598.

Estoppel, in law, anything done by party himself, which puts a period an action by closing the ground of ntroversy.

Estotiland, the vast arctic country aving no existence save in the brains the old geographers, and placed by em on the spot now occupied by rtions of Newfoundland, Labrador, ıd that part of British America bor- ring on Hudson Bay. It was said have been discovered by two Fries- nd fishermen driven out of their urse by a storm, two centuries be- re the time of Columbus, but the oıy is nothing more than a legend. 1497 the Cabots set sail from Eng- nd for Estotiland, but discovered in- ead Newfoundland.

Estuary, the wide mouth of a river opening out so as to form an arm of the sea.

Etappen, a department in continental armies the business of which is to relieve the commanders of the field army of all responsibility for their communications in the rear. The officers of this department supervise all arrangements for loading and unloading at stations, forwarding, feeding, billeting, etc.

Etching, the art of producing designs on a plate of steel or copper by means of lines drawn with an etching needle (a fine-pointed steel tool), the lines being drawn through a coating or varnish (the ground), and bitten in by some strong acid which can only affect the plate where the varnish has been removed.

Eternal City, The, Rome, the capital of Italy. The term is frequently to be met in classic literature.

Ether, a hypothetical medium of extreme tenuity and elasticity believed by scientists to be diffused not only throughout all space but among the molecules of which solid bodies are composed and to be the medium of transmission of light and heat. From magneto-optic phenomena it seems certain that something of the nature of molecular rotation is going on in the ether.

Ether, or **Ethylic Ether, Vinic Ether, Sulphuric Ether,** a colorless, transparent, volatile liquid of great mobility and high refractive power, and possessing a fragrant odor and a fiery, passing to a cooling taste. Ether is useful in the preparation of freezing mixtures, the mixture of ether and solid carbonic acid giving rise to a very low temperature. When inhaled by man and the lower animals, ether first produces stimulating and intoxicating effects, but afterward causes drowsiness, accompanied by complete insensibility. This makes it an important anæsthetic agent; for some time it was the only agent used for producing anæsthesia in operations, but on account of its dangerous qualities it was largely superseded by chloroform.

Ethics, that branch of moral philosophy, which is concerned with human character and conduct. It deals with man as a source of action and is closely related to psychology and sociology. It seeks to determine the principles by which conduct is to be regulated, having to do not merely with what is, but with what ought to be. Modern ethics has frequently a distinctly legal or theological stamp, being presented as a system of duties prescribed by God or by conscience. Underlying this notion is the conception of certain kinds of conduct, or certain types of character, as better than others or preferable to them.

Ethiopia, or **Æthiopia,** in ancient geography, the country lying to the S. of Egypt, and comprehending the modern Nubia, Kordofan, Abyssinia, and other adjacent districts; but its limits were not clearly defined. In ancient times its history was closely connected with that of Egypt, and about the 8th century B. C. it imposed a dynasty on Lower Egypt, and acquired a predominant influence in the valley of the Nile. In sacred history Ethiopia is repeatedly mentioned as a powerful military kingdom (see particularly Isaiah xx: 5). In the 6th century B. C. the Persian Cambyses invaded Ethiopia; but the country maintained its independence till it became tributary to the Romans in the reign of Augustus. Subsequently Ethiopia came to be the designation of the country now known as Abyssinia, and the Abyssinian monarchs still call themselves rulers of Ethiopia.

Ethnology, the science which treats of the various races of mankind and their origin. With anthropology, philology, psychology, and sociology it helps to cover the complete study of man. Owing to its comparatively recent origin, much diversity of opinion prevails regarding its proper scope and limits. But it may be said to embrace a comparative study of the various races of mankind, their origin, physical and mental differences, dispersion, geographical distribution and interminglings.

The fundamental human types generally recognized are the black, frizzly-haired Ethiopic (negro); the yellow, lank-haired Mongolic; the white, smooth-haired Caucasic; the coppery, lank and long-haired American; and the brown straight-haired Malayo-Polynesian. The last is commonly rejected as evidently the outcome of a comparatively recent mixture in which the Mongolic elements predominate. Most authorities regard also the American as a remote branch of the same group; this view seems justified by the striking Mongolic features occurring in every part of the New World, as among the Utahs of the Western States and the Botocudos of Eastern Brazil. We are thus reduced to the three first-mentioned divisions, a grouping again adopted by Professor Flower (1885), who concludes that primitive man has in the course of ages become differentiated into "the three extreme types represented by the Caucasian of Europe, the Mongolian of Asia, and the Ethiopian of Africa, and that all existing members of the species can be ranged around these types, or somewhere or other between them."

Subjoined is a brief summary of the main divisions and subdivisions of these three fundamental groups

I. The Ethiopic group falls naturally into a Western or African and an Eastern or Oceanic division. The Western occupies all Africa from the Sahara S. and comprises a N. or Sudanese branch (African Negroes proper), and a S. or Bantu branch (more or less mixed Negro and Negroid populations). The Oceanic division of the Ethiopic group comprises four branches: (1) the Papuans of the Eastern Archipelago and New Guinea; (2) the closely allied Melanesians of the Solomon, New Hebrides, New Caledonia, Loyalty, and Fiji Archipelagos; (3) the now extinct Tasmanians, and (4) the Australians, the most divergent of all Negro or Negroid peoples.

II. The Mongolic group occupies the greater part of the Eastern hemisphere and till the discovery of America was in exclusive possession of the New World. Its chief branches are (1) the Mongolo-Tartars of Central and North Asia, Asia Minor, parts of Russia and the Balkan Peninsula; (2) the Tibeto-Indo-Chinese of Tibet, China proper, Japan and Indo-China: (3) the Finno-Ugrians of Finland, Lapland, Esthonia, Middle Volga, Ural Mountains, North Siberia, Hungary; (4) the Malayo-Polynesians of the Malay Peninsula, the

reater and lesser Sunda Islands,
ladagascar, the Philippines, For-
osa, and Eastern Polynesia; (5) the
merican Indians, comprising all the
borigines of the New World, except
ne Eskimo, who with the Ainos of
esso, form aberrant members of the
longolic group.

III. The Caucasic group, called also
lediterranean because its original do-
ain is Western Asia, Europe and
orth Africa — i. e., the lands en-
rcling the Mediterranean Basin —
as in recent times spread over the
hole of the New World, South Af-
ca, and Australasia. The chief
ranches are: (1) Aryans of India,
ran, Armenia, Asia Minor, and great
art of Europe, with sub-branches;
2) Semites of Mesopotamia, Syria,
rabia, and North Africa, with sub-
ranches; (3) Hamites of North
nd East Africa; (4) the Caucas-
ns proper; (5) the Basques of the
estern Pyrenees.

Etienne, Charles Guillaume, a
rench dramatist; born in Chamouil-
, Jan. 6, 1778; died in Paris March
3, 1845.

Etienne, St., a town of Southern
rance, in the department of the
oire, on the Furens, 32 miles S. W.
Lyons. It has spacious streets with
bstantial houses, but owing to the
mber of public works represents a
ngy appearance. The principal build-
gs and institutions are the cathedral,
ancient Romanesque structure; the
wn house, court house, exchange,
mmunal college, mining school, gal-
ry of arts, library and museum. The
wn stands in the center of one of
e most valuable mineral fields of
rance; and in addition to the exten-
ve collieries, blast furnaces and other
onworks in the vicinity, has manu-
ctures of ribbons, silks, cutlery, fire-
ms, etc. The collieries alone em-
oy about 16,000 men. Pop. 117,875.

Etiolation, or **Blanching,** of
ants, is a state produced by the ab-
nce of light, by which the green
lor is prevented from appearing. It
effected artificially, as in the case of
lery, by raising up the earth about
e stalks of the plants; by tying the
aves together to keep the inner ones
om the light; by covering with pots,
xes, or the like, or by setting in a
rk place. The green color of etiolated plants may be restored by exposure to light.

Etiquette, a collective term for the established ceremonies and usages of society. Among courts the Byzantine and Spanish courts and the French court under Louis XIV. and XV., were noted for the strictness of their etiquette. Social etiquette consists in so many minute observances that a tolerable familiarity with it can be acquired only by a considerable intercourse with polite society. It is often said that all that is necessary to constitute good social manners is common sense and good feeling; but, not to mention those formal rules of society which, though intrinsically worthless, demand a certain amount of respect, there are also many difficulties and emergencies in social intercourse which require peculiar tact and delicacy of judgment. Hence quickness of sympathy and a certain fineness of observation are more needed for proficiency in this sphere than pure power of intellect.

Etna, or **Ætna, Mount,** the greatest volcano in Europe, a mountain in the province of Catania, Sicily; height, 10,874 feet. It rises immediately from the sea, has a circumference of more than 100 miles, and dominates the whole N. E. of Sicily, having a number of towns and villages on its lower slopes. The top is covered with perpetual snow; midway down is the woody or forest region; at the foot is a region of orchards, vineyards, olive groves, etc. Etna thus presents the variety of climates common to high mountains in lower latitudes, oranges and lemons and other fruits growing at the foot, the vine rather higher up, then oaks, chestnuts, beeches, and pines, while on the loftiest or desert region vegetation is of quite a stunted character. A more or less distinct margin of cliff separates the mountain proper from the surrounding plain; and the whole mass seems formed of a series of superimposed mountains, the terminal volcano being surrounded by a number of cones, all of volcanic origin, and nearly 100 of which are of considerable size.

The eruptions of Etna have been numerous, and many of them destructive. That of 1169 overwhelmed Catania and buried 15,000 persons in the ruins. In 1669 the lava spread over the country for 40 days, and 10,000 persons are estimated to have perished. In 1693 there was an earthquake during the eruption, when over 60,000 lives were lost. One eruption was in 1755, the year of the Lisbon earthquake. Among more recent eruptions are those of 1852, 1865, 1874, 1879, 1886, 1892. An eruption is ordinarily preceded by premonitory symptoms of longer or shorter duration. The population of the district of Etna is about 300,000.

Etruria (Greek Tyrrhenia), the name anciently given to that part of Italy which corresponded nearly with the modern Tuscany, and was bounded W. by the Mediterranean, E. by the Apennines, N. by the river Magra, and S. by the Tiber.

Etruria, Kingdom of, in Italy, founded by Napoleon I. in 1801. Its capital was Florence. In 1807 Napoleon incorporated it with the French empire.

Etruscan Vases, a class of beautiful ancient painted vases made in Etruria, but not strictly speaking a product of Etruscan art, since they were really the productions of a ripe age of Greek art, the workmanship, subjects, style, and inscriptions being all Greek.

Etty, William, an English painter; born in 1787; died in 1849.

Etymology, a term applied to that part of grammar which treats of the various inflections and modifications of words and shows how they are formed from simple roots; and to that branch of philology which traces the history of words from their origin to their latest form and meaning.

Eubœa, formerly called Negropont, a Greek island, the second largest island of the Ægean Sea. It is 90 miles long, 30 in greatest breadth, reduced at one point to 4 miles. It is separated from the mainland of Greece by the narrow channels of Egripo and Talanta. It is connected with the Bœotian shore by a bridge. There are several mountain peaks over 2,000 feet, and one over 7,000 feet. The island is well-wooded and remarkably fertile. Wine is a staple product, and cotton, wool, pitch, and turpentine are exported. The chief towns are Chalcis and Karysto. The island was anciently divided among seven independent cities, the most important of which were Chalcis and Eretria, and its history is for the most part identical with that of those two cities. With some small islands it forms a Greek province with a population of 95,136.

Eucaine, a new anæsthetic which renders the parts to which it is applied insensible, while the remainder of the body is in its normal state. Eucaine is prepared in Germany from a South American plant, and is similar in its local action to cocaine, but without any of the poisonous effects of the latter.

Eucalyptus, a genus of trees, mostly natives of Australia, and remarkable for their gigantic size, some of them attaining the height of 480 or 500 feet. In the Australian colonies they are known by the name of gum trees, from the gum which exudes from their trunks; and some of them have also such names as "stringy bark," "iron bark," etc. The wood is excellent for ship building and such purposes. The tree has been introduced in California.

Eucharist, a name for the sacrament of the Lord's Supper, in reference to the blessing and thanksgiving which accompany it.

Euchre, the most generally played parlor game after whist in the United States.

Euclid, a celebrated mathematician, who collected all the fundamental principles of pure mathematics, which had been delivered down by Thales, Pythagoras, Eudoxus, and other mathematicians before him, which he digested into regularity and order, with many others of his own, on which account he is said to have been the first who reduced arithmetic and geometry into the form of a science. He lived about 277 B. C., and taught mathematics in Alexandria.

Eudocia, or **Athenais,** a learned Athenian lady, a daughter of Leontius the philosophical sophist. After the death of her father, who left nearly all his property to his two sons, she went to Constantinople for the purpose of complaining of this injustice to the Emperor, Theodosius II. There he embraced the Christian religion, vas baptized as Eudocia and became mpress in A. D. 421. She was aftervard divorced and spent the remainler of her life in Jerusalem, engaged n acts of devotion. She is said to ave written some Greek poems and lso a life of Christ. She died in 460.

Eudoxians, followers of Eudoxius, vho from A. D. 356 was Bishop of ntioch, in Syria, and from 360 to his eath in 370 Bishop and Patriarch of onstantinople. He was successively n Arian, a Semi-Arian and Aetian. especting the Trinity, he believed the vill of the Son to be differently affectd from that of the Father.

Eudoxus, of Cnidos, whom Cicero alls the prince of astronomers, lived bout 370 B. C.; was the scholar and riend of Plato, and traveled into gypt, where he continued for 13 ears in intimate intercourse with the riests. All his works are lost, but he poem of "Aratus" on astronomy hows the extent of his astronomical nowledge, for the commentary on this oem by Hipparchus proves it is nothng else than a metrical version of he "Phenomena" of Eudoxus, a work ritten in prose. Eudoxus seems to ave been the first to introduce an asronomical globe into Greece, and this nay account for the great reputation hich he acquired and long continued o enjoy.

Eugene, Francois, of Savoy, nown as Prince Eugene, 5th son of ugene Maurice, Duke of Savoy-Cargnan, and Olympia Mancini, a niece f Cardinal Mazarin; born in Paris, ct. 18, 1663. Among all the generals nd statesmen of Austria none renered more numerous and important ervices than Eugene. He was great like in the field and the cabinet. Conrary to his own inclinations, Eugene as destined for the Church. He petioned Louis XIV. for a company of ragoons, but was refused. Indigant at this repulse, and at the insults ffered to his family, and particularly his mother, Eugene, in 1683, enered the Austrian service, as two of is brothers had already done. Some ears afterward he entered France at e head of a victorious army. He efeated the Turks at the battle of enta (Sept. 11, 1697), and obliged em to accede to the peace of Carlowitz (1699), which was the first symptom of their decline. In the Spanish War of Succession he coöperated with the great English general Marlborough, and the two won signal victories over the French. In the war with Turkey in 1716 Eugene defeated two superior armies, and in 1717 took Belgrade, after having gained a decisive victory over a third army that came to its relief. The treaty of Passarovitz was the result of this success. During 15 years which followed, Austria enjoyed peace, and Eugene was as active in the cabinet as he had been in the field. Eugene appeared in his old age at the head of an army on the banks of the Rhine, but returned to Vienna without effecting anything of importance. He died in Vienna April 21, 1736.

Eugenie (maiden name, Marie de Guzman), ex-empress of the French; born in Granada, Spain, in 1826. Her father, the Count de Montijo, was of a noble Spanish family; her mother was of Scotch extraction, maiden name Kirkpatrick. On Jan. 29, 1853, she became the wife of Napoleon III. and Empress of the French. On March 16, 1856, a son was born of the marriage. When the war broke out with Germany she was appointed regent (July 27, 1870) during the absence of the emperor, but on Sept. 4, the revolution forced her to flee from France. She went to England, where she was joined by the prince imperial and afterward by the emperor. Camden House, Chislehurst, became the residence of the imperial exiles. On Jan. 9, 1873, the emperor died, and six years later the prince imperial was slain while with the English army in the Zulu war. In 1881 the empress transferred her residence to Farnborough in Hampshire.

Eugenius, the name of four Popes.

Eulalia, a virgin martyr; born in Merida, in Estramadura. When she was only 12 years old, the great persecution of Diocletian was set on foot, whereupon the young girl left her home, and, in the presence of the Roman judge, cast down the idols he had set up. She was martyred by torture, Feb. 12, 308 A. D.

Eulenspiegel, Till, a name which has become associated in Germany with all sorts of wild, whimsical frolics, and with many amusing stories. Some such popular hero of tradition and folklore seems to have really existed in Germany, probably in the first half of the 14th century, and a collection of popular tales of a frolicsome character, originally written in Low German, purports to contain his adventures. The work was early translated into English and almost all European tongues.

Euler, Leonard, a distinguished mathematician; born in Basel in 1707. He was educated at the University of Basel under the Bernouilli, through whose influence he procured a place in the Academy of St. Petersburg. In 1741 he accepted an invitation from Frederick the Great to become Professor of Mathematics in the Berlin Academy, but in 1766 returned to St. Petersburg, where he died in 1783, in the office of director of the mathematical class of the academy. He applied the analytic method to mechanics and greatly improved the integral and differential calculus.

Eumenes, one of the successors of Alexander the Great. He obtained the government of part of Asia Minor, and was the ally of Perdiccas; but in the year 316 B. C., he fell into the power of Antigonus and was put to death.

Euphonium, a brass bass instrument, generally introduced into military bands, and frequently met with in the orchestra as a substitute for the bass trombone, from which, however, it is very different in tone. It is tuned to C or B flat.

Euphrates, or **El Frat,** a celebrated river of Western Asia, in Asiatic Turkey, having a double source in two streams rising in the Anti-Taurus range. Its total length is about 1,750 miles, and the area of its basin 260,000 square miles. It flows mainly in a S. E. course through the great alluvial plains of Babylonia and Chaldæa till it falls into the Persian Gulf by several mouths, of which only one in Persian territory is navigable. About 100 miles from its mouth it is joined by the Tigris, when the united streams take the name of Shatt-el-Arab. It is navigable for about 1,200 miles, but navigation is somewhat impeded by rapids and shallows.

Euphrosyne, in Greek mythology, one of the three Graces.

Euphuism, an affected style of speech which distinguished the conversation and writings of many of the wits of the court of Queen Elizabeth. The name and the style were derived from the "Euphues, the Anatomy of Wit," of John Lyly, (about 1554–1606).

Eurasians (syncopated from Europ-Asians), a name sometimes given to the "half-castes" of India, the offspring of European fathers and Indian mothers. They are particularly common in the three presidential capitals — Calcutta, Madras, and Bombay. They generally receive a European education, and the young men are often engaged in government or mercantile offices. The girls, in spite of their dark tint, are generally pretty and often marry Europeans.

Eure, a river of France, which rises in the department of the Orne, and falls into the Seine after a course of 124 miles, being navigable for about half the distance. It gives its name to a department in the N. W. of France, forming part of Normandy; area, 2,300 square miles. The surface consists of an extensive plain, intersected by rivers, chief of which is the Seine. Evreux is the capital. Pop. (1901) 331,184.

Eure-et-Loir, a department in the N. W. of France, forming part of the old provinces of Orleannais and Ile-de-France; area, 2,267 square miles. The department is essentially agricultural, and has few manufactures. The capital is Chartres. Pop. (1901) 272,624.

Eureka, a Greek word meaning, "I have found it," the exclamation of Archimedes when, after long study, he discovered a method of detecting the amount of alloy in King Hiero's crown. Hence the word is used as an expression of triumph at a discovery or supposed discovery.

Eureka College, a coeducational institution in Eureka, Ill.; founded in 1855 under the auspices of the Christian Church.

Euripides, a celebrated Athenian tragedian; born in Salamis, in 480 B. C. (or 485). He studied under Prodicus and Anaxagoras, and is said

have begun to write tragedies at
e age of 18, although his first pub-
shed play, the "Peliades," appeared
ly in 455 B. C. He was not success-
l in gaining the first prize till the
ear 441 B. C. The violence of un-
rupulous enemies, who accused him
impiety and unbelief in the gods,
ove Euripides to take refuge at the
urt of Archelaus, King of Mace-
nia, where he was held in the high-
t honor. Euripides is a master of
agic situations and pathos, and
ows much knowledge of human na-
re and skill in grouping characters.
e is said to have composed 75, or
cording to another authority 92
agedies.

Euroclydon, a tempestuous wind
at frequently blows in the Levant,
d which was the occasion of the dis-
trous shipwreck of the vessel in
hich St. Paul sailed, as narrated in
cts xxvii: 14–44. The wind is rep-
sented as blowing from Crete, while
e vessel which contained Paul was
asting under the S. shore of the is-
nd, and the course taken by the ves-
l is just that which would have
en taken by one driven by a N. E.
nd. Such a wind is described by
ilors of the present day as prevalent
certain seasons in the Mediterran-
n.

Europe, the smallest of the great
ntinents. The most northerly point
the mainland is Cape Nordkyn, in
pland, the most southerly points are
nta da Tarifa, in the Strait of
braltar, and Cape Matapan, which
rminates Greece. The most westerly
int is Cape Roca in Portugal, and
katerinburg is the most easterly.
om Cape Matapan to North Cape
a direct distance of 2,400 miles from
pe St. Vincent to Ekaterinburg,
E. by E., 3,400 miles; area of the
ntinent, about 3,800,000 square
les. Great Britain and Ireland,
eland, Nova Zembla, Corsica, Sar-
nia, Sicily, Malta, Crete, the Ionian
d the Balearic Islands are the chief
ands of Europe.

Europe is occupied by several differ-
t peoples or races, in many parts
w greatly intermingled. The Celts
ce possessed the W. of Europe from
e Alps to the British Islands. But
e Celtic nationalities were broken by
the wave of Roman conquest, and the suceeding invasions of the Germanic tribes completed their ruin. At the present day the Celtic language is spoken only in the Scotch Highlands (Gaelic), in some parts of Ireland (Irish), in Wales (Cymric), and in Brittany (Armorican). Next to the Celtic comes the Teutonic race, comprehending the Germanic and Scandinavian branches. The former includes the Germans, the Dutch, and the English. The Scandinavians are divided into Danes, Swedes, and Norwegians. To the E., in general, of the Teutonic race, though sometimes mixed with it, come the Slavonians, that is, the Russians, the Poles, the Czechs or Bohemians, the Servians, Croatians, etc. In the S. and S. E. of Europe are the Greek and Latin peoples, the latter comprising the Italians, French, Spanish and Portuguese. All the above peoples are regarded as belonging to the Indo-European or Aryan stock. To the Mongolian stock belong the Turks, Finns, Lapps, and Magyars or Hungarians, all immigrants into Europe in comparatively recent times. The Basques at the western extremity of the Pyrenees are a people whose affinities have not yet been determined. The total population of Europe is about 330,000,000; nine-tenths speak the languages of the Indo-European family, the Teutonic group numbering about 108,000.000, the Slavonic and Latin over 95,000,000 each. The prevailing religion is the Christian, embracing the Roman Catholic Church, which is the most numerous, the various sects of Protestants, and the Greek Church. A part of the inhabitants profess the Jewish, and a part the Mohammedan religion.

Europe was probably first peopled from Asia. The first authentic history begins in Greece at about 776 B. C. Greek civilization was at its most flourishing period about 430 B. C. After Greece came Rome, which, by the early part of the Christian era, had conquered Spain, Greece, Gaul, Helvetia, Germany between the Danube and the Alps, Illyria, Dacia, etc. Improved laws and superior arts of life spread with the Roman empire throughout Europe, and the unity of government was also extremely favorable to the extension of Christianity.

With the decline of the Roman empire a great change in the political constitution of Europe was produced by the universal migration of the Northern nations. The Ostrogoths and Lombards settled in Italy, the Franks in France, the Visigoths in Spain, and the Anglo-Saxons in South Britain, reducing the inhabitants to subjection or becoming incorporated with them. Under Charlemagne (771–814) a great Germanic empire was established, so extensive that the kingdoms of France, Germany, Italy, Burgundy, Lorraine, and Navarre were afterward formed out of it. About this time the Northern and Eastern nations of Europe began to exert an influence in the affairs of Europe. The Slavs, or Slavonians, founded kingdoms in Bohemia, Poland, Russia, and the N. of Germany; the Magyars appeared in Hungary, and the Normans agitated all Europe, founding kingdoms and principalities in England, France, Sicily, and the East. The Crusades and the growth of the Ottoman power are among the principal events which influenced Europe from the 12th to the 15th century.

The conquest of Constantinople by the Turks (1453), by driving the learned Greeks from this city, gave a new impulse to letters in Western Europe, which was carried onward by the invention of printing, and the Reformation. The discovery of America was followed by the temporary preponderance of Spain in Europe, and next of France. Subsequently Prussia and Russia gradually increased in territory and strength. The French Revolution (1789) and the Napoleonic wars had a profound effect on Europe, the dissolution of the old German empire being one of the results. Since then the most important events in European history have been the establishment of the independence of Greece; the disappearance of Poland as a separate state; the Crimean War; the unification of Italy under Victor Emmanuel; the Franco-German war, resulting in the consolidation of Germany into an empire under the leadership of Prussia; the partial dismemberment of the Turkish empire, including the loss of Crete; the loss by Spain of her colonies in 1898; the absorption by England of the Transvaal Republic and the Orange Free State in Africa in 1900; and the trouble with China caused by the Boxer rising in 1900–1901.

The map of Europe is likely soon to undergo further changes, as the expulsion of the Turk from that continent seems to be near. The Macedonian horrors, although probably much exaggerated in the interest of the agitation against Turkish rule, have aroused the powers to the need of rescuing the European provinces of the Sultan from anarchy and massacre, and it is expected that Macedonia will receive autonomy, and that steps will be taken to place the remnant of the Sultan's European dominions under proper control.

Eusebius, a Greek writer, the father of ecclesiastical history; born in Palestine about A. D. 265. About 315 he was appointed Bishop of Cæsarea. He became an advocate of the Arians and condemned the doctrines of Athanasius. His ecclesiastical history extends from the birth of Christ to 324. Among his other extant works is a life of Constantine the Great. He died about 340.

Eustachian Tube, in anatomy, a canal leading from the pharynx to the tympanum of the ear.

Eustachio, Bartolomeo, an Italian physician and anatomist; born soon after 1500. He devoted himself to medical science and in particular to anatomy, which he much enriched by his researches. Among his discoveries were the Eustachian tube and the Eustachian valve of the heart. He died about 1574.

Eustatius, St., a Dutch island in the West Indies, one of the Leeward Islands, 11 miles N. W. of St. Christopher's; pyramidal in form; area 8 square miles. The climate is healthy, but earthquakes are frequent. Pop. 2,335.

Eustis, James Biddle, an American diplomatist; born in New Orleans, La., Aug. 27, 1834; was educated in Brookline, Mass., and at the Harvard Law School; was admitted to the bar in 1856 and practised in New Orleans till the Civil War broke out. He entered the Confederate army and served as judge-advocate on the staffs of Generals Magruder and J. E. Johnston till the close of the war. He then resumed practice in his ative city. He was elected United States Senator to fill a vacancy in 876, but was not given his seat till ate in 1877; was Professor of Civil aw in the University of Louisiana in 879-1884, when he was again elected Senator. In March, 1893, he was appointed United States minister to rance, and on the expiration of his erm, in 1897, resumed practice in ew York city. He died in Newport, . I., Sept. 9, 1899.

Eustis, William, an American olitician; born in Cambridge, Mass., une 10, 1753; became a physician; as Secretary of War in 1809-1813; nd governor of Massachusetts in 823-1825. He died in Boston, Feb. , 1825.

Eutaw Springs, a small tributary f the Santee river in Charleston co., . C. It is noted for the battle fought n its banks in 1781, between about ,000 Americans under General reene, and about 2,300 British uner Colonel Stuart. The latter were efeated and driven from their camp, ut returned and Greene was comelled to retire. In the night, howver, the British retreated toward harleston, leaving 138 killed and ounded and about 500 prisoners. The mericans lost about 550 in killed, ounded and missing.

Euterpe, one of the Muses, considred as presiding over lyric poetry, the vention of the flute being ascribed to er. In botany, a genus of palms, atives of South America, sometimes early 100 feet in height.

Eutropius, Flavius, a Latin hisorian, who flourished about A. D. 360. is abridgment of the history of Rome written in a perspicuous style.

Euxine, the ancient name for the lack Sea.

Evangelical, a term often used to ualify certain theological views, esecially strict views on the question f the atonement, justification by ith, the inspiration and authority f the Scriptures, and allied doctrines. n England the so-called Low Church arty is evangelical in its views. In more general sense the word implies peculiar fervency and earnestness insisting on such doctrines as reeneration, redemption, etc. The Evangelical Church" is the official title of the Established Church of Prussia, formed in 1817 by the union of Lutherans and Calvinists.

Evangelical Alliance, an association of members of different sections of the Christian Church, organized in London in 1846, to lend its influence in favor of evangelical doctrines, religious union and liberty, and against superstition and unbelief. The alliance has branches throughout the world, the American branch being especially strong. A week of united prayer is held in the early part of January each year.

Evangelical Association, a body of American Christians, chiefly of German descent, established about the beginning of the 19th century. In form of government and mode of worship it generally agrees with the Methodist Episcopal Church.

Evangelical Union, the name of a religious sect, also familiarly known as the Morisonians, from the Rev. James Morison, its originator. It took rise in Scotland in 1840, and three years afterward organized itself as a separate Christian denomination.

Evangelist, a writer of the history or doctrines, precepts, actions, life, and death of Christ; in particular, the "four evangelists," Matthew, Mark, Luke, and John. The term is also applied to preachers of Christian doctrine, who go about seeking to convert sinners, and bring them to repentance, and to peace with God.

Evans, Augusta Jane (Wilson), an American novelist; born in Columbus, Ga., May 8, 1835.

Evans, Sir De Lacy, a British general; born in Moig, Ireland, in 1787. After some years of service in India he joined the army of Wellington in the Peninsula in 1812, where he served with distinction. In 1814 he was sent to America, and was present at the battles of Bladensburg and New Orleans, returning to Europe in time to take part in Waterloo. During the Crimean War he distinguished himself as commander of the second division of the English army. He died Jan. 9, 1870.

Evans, Edward Payson, an American author; born in Remsen, N. Y., Dec. 8, 1833; has made a special study of Oriental languages; in 1884 became connected with the "Allgemeine Zeitung" of Munich in Europe, to which he contributed many articles on the literary, artistic, and intellectual life of the United States.

Evans, Frederick William, an American lecturer and writer; born in England, June 9, 1808; removed to the United States in 1820; joined the United Society of Believers (Shakers) at Mt. Lebanon, N. Y., in 1830. His works deal with the history and doctrines of that sect. He died at Mt. Lebanon, N. Y., March 6, 1893.

Evans, Hugh Davy, an American author; born in Baltimore, Md., April 26, 1792; studied law and began practice in Baltimore in 1815; and became eminent as a jurist and editor. Died July 16, 1868.

Evans, John, an American philanthropist; born in Waynesville, O., March 9, 1814; was graduated at the medical department of Cincinnati College in 1838; began practice in Ottawa, Ill., but soon afterward removed to Attica, Ind. In 1848 he became a professor in the Rush Medical College of Chicago, in which city he accumulated a large fortune by investments in real estate. Much of this he gave to philanthropic objects. He established the Northwestern University, at Evanston, Ill. In 1862 he was appointed governor of the Colorado Territory. Later he established the University of Denver. He died in Denver, Col., July 3, 1897.

Evans, John, an American geologist; born in Portsmouth, N. H., Feb. 14, 1812; was graduated at the St. Louis Medical College; served on several State and Territorial geological surveys; and discovered remarkable fossil deposits in the Bad Lands of Nebraska. He died in Washington, D. C., April 13, 1861.

Evans, Oliver, an American inventor; born in Newport, Del., in 1755; was apprenticed to a wheelwright. In 1777 he invented a machine for making card-teeth. Among his other inventions are the automatic flour mill; the high pressure steam engine; a steam dredge; and the boiler known as the "Cornish boiler." He died in New York, April 25, 1819.

Evans, Robley Dunglison, an American naval officer; born in Floyd co., Va.; was graduated at the United States Naval Academy in 1863. During the Civil War he took part in the attack on Fort Fisher, Jan. 15, 1865, and in the land engagement was wounded four times. In 1891 he was in command of the "Yorktown" at Valparaiso, Chile, during the strained relations between the United States and that country. He commanded the "Iowa" in the action of July 3, 1898, off Santiago de Cuba, which resulted in the destruction of the Spanish fleet. Was commissioned rear admiral in 1901.

Evans, Thomas Williams, an American dentist; born in Philadelphia, Pa., Dec. 23, 1823; studied dentistry and practised in Maryland and later in Lancaster, Pa.; made a specialty of saving teeth by filling. In 1848 he went by invitation to Paris to attend to the teeth of President Louis Napoleon. His home was the refuge of the Empress Eugenie from the mob on the night of Sept. 4, 1870. Dressed in his wife's clothes, she was taken by him to the Normandy coast, where he secured her escape to England. Died in Paris, Nov. 14, 1896.

Evaporation, the conversion of a liquid or solid by heat into vapor or steam, which becomes dissipated in the atmosphere in the manner of an elastic fluid. The process of evaporation is constantly going on at the surface of the earth, but principally at the surface of the sea, of lakes, rivers, and pools. The vapor thus formed, being specifically lighter than atmospheric air, rises to considerable heights above the earth's surface; and afterward, by a partial condensation, forms clouds, and finally descends in rain.

Evarts, William Maxwell, an American lawyer; born in Boston, Mass., Feb. 6, 1818; was graduated at Yale College in 1837 and studied at the Harvard Law School. In 1841 he began the practice of law in New York city; and in 1868 was the principal counsel for President Johnson in his impeachment trial. In 1868–1869 he was Attorney-General of the United States; in 1877 principal counsel for the Republican party before the Electoral Commission on the Hayes-Tilden election returns; in 1877–1881 United States Secretary of State; and n 1885–1891 United States Senator rom New York. He also represented he United States in the Alabama-laims case, and was the principal ounsel for Henry Ward Beecher in is defense against the charges preerred by Theodore Tilton. He died in New York, Feb. 2, 1901.

Evelyn, John, an English writer; orn in Wotton, Surrey, Oct. 31, 620. After completing his course at Oxford he studied law at the Middle Temple, visited various parts of the Continent, and in 1659 took the royal ide in the civil war. He published umerous works. By far his most mportant work is his memoirs, comrehending a diary and corresponence, which are interesting contribuions to the history of the time. He ied in Wotton, Feb. 27, 1706.

Evening Star, the name given to ny one of the planets that may be een at certain seasons just above the orizon early in the evening; especialy applied to the planet Venus on account of its brightness and beauty. Mars, Jupiter, and Saturn are the ther evening stars.

Everest, Mount, the highest known ountain in the world, situated in the Himalayas, in Nepal. It is 29,002 eet high, and was named in honor f Sir George Everest, a noted Engish surveyor and civil engineer.

Everett, Alexander Hill, an Amrican diplomatist; born in Boson, Mass., March 19, 1792. After tudying at Harvard, in 1809 he acompanied John Quincy Adams to St. Petersburg as secretary of legation. He afterward filled successive diploatic posts in the Netherlands, Spain, nd elsewhere. He died in Canton, China, in 1847.

Everett, Charles Carroll, cleryman; born in Brunswick, Me., June 9, 1829; was graduated at Bowdoin College, and studied at the University f Berlin. He returned to Bowdoin College, where he was Professor of Modern Languages in 1855–1857. He was ordained pastor of the Indepenent Congregational Church in 1859; esigned in 1869 to become Professor f Theology in Harvard Divinity chool, and was dean of the school rom 1879 till his death. He died in Cambridge, Mass., Oct. 17, 1900.

Everett, David, an American writer; born in Princeton, Mass., March 29, 1770; studied law in Boston, and while there wrote for "Russell's Gazette" and a literary paper called the "Nightingale." He wrote the famous lines beginning —

> "You'd scarce expect one of my age
> To speak in public on the stage."

He died in Marietta, O., Dec. 21, 1813.

Everett, Edward, an American statesman; born in Dorchester, Mass., April 11, 1794. After traveling for some years in Germany and England he returned to America in 1819 to occupy the chair of Greek Literature at Harvard. He became editor of the "North American Review," and entering the political world became successively member of Congress, governor of Massachusetts, and minister plenipotentiary to England (1840). In 1845 he was appointed president of Harvard College, and in 1852 Secretary of State. Shortly after he retired to private life.

He was one of America's greatest sons, a vigorous champion of American institutions against English sneers and falsehood, and as earnest a champion of honesty in public affairs. He opposed resolutely the occupation of Indian lands without the consent of the Indians, and to him was chiefly due the preservation of a sound currency in the panic of 1837, and the establishment of the first Board of Education in the United States. A graceful and powerful orator, he was chosen to deliver the oration at Gettysburg, when his noble periods were entirely eclipsed by Lincoln's simple, immortal words. He died in Boston, Jan. 15, 1865.

Everett, William, an American author and educator; youngest son of Edward Everett; born in Watertown, Mass., Oct. 10, 1839. From 1870 to 1877 he was assistant Professor of Latin at Harvard. In 1887 he was master of Adams Academy at Quincy, Mass.; in 1893 was elected to Congress.

Everglades, a low, marshy tract of country in Southern Florida, inundated with water and interspersed with patches or portions covered with high grass and trees. It is 160 miles long and 60 broad.

Evergreen, a plant that retains its verdure through all the seasons, as the fir, the holly, the laurel, the cedar, the cypress, the juniper, the holm-oak, and many others. Evergreens shed their old leaves in the spring or summer, after the new foliage has been formed, and consequently are verdant through all the winter season.

Eviction, the dispossession of a person from the occupancy of lands or tenements. The term occurs most commonly in connection with the proceedings by which a landlord ejects his tenant for non-payment of rent or on determination of the tenancy.

Evidence, that which makes evident, which enables the mind to see truth. It may be intuitive, i. e., resting on the direct testimony of consciousness, of perception or memory, or on fundamental principles of the human intellect; or it may be demonstrative, i. e., in a strict sense, proofs which establish with certainty as in mathematical science certain conclusions; or it may be probable, under which class are ranked moral evidence, legal evidence, and generally every kind of evidence which, though it may be sufficient to satisfy the mind, is not an absolutely certain and incontrovertible demonstration.

In jurisprudence evidence is classified into that which is direct and positive, and that which is presumptive and circumstantial. The former is that which is proved by some writing containing a positive statement of the facts and binding the party whom it affects; or that which is proved by some witness, who has, and avers himself to have, positive knowledge thereof by means of his senses. Whenever the fact is not so directly and positively established, but is deduced from other facts in evidence, it is presumptive and circumstantial only.

Evidences of Christianity may be divided broadly into two great classes, viz., external evidences, or the body of historical testimonies to the Christian revelation; and internal evidences, or arguments drawn from the nature of Christianity itself as exhibited in its teachings and effects, in favor of its divine origin.

Evil Eye, the power which, according to a superstition, exists in certain persons of exerting an evil influence or fascination on another by a glance from the eyes. Amulets of various forms — the most common are those shaped like horns, like a frog, or like a hand — were worn to counteract its effect, and such devices adopted by way of safeguard, as spitting on the ground or on the breast, showing something ridiculous to the fascinator, dissimulating good fortune, or doing something unpleasant by way of a counter-penance.

Evolution, in the natural sciences a term used to denote the process by which an established state of affairs, or system of things, or degree of organization, after persisting for a time, gives rise to another. Thus, we speak of the evolution of the solar system, the evolution of continents, the evolution of plants, the evolution of animals, the evolution of man, the evolution of the brain, and so on endlessly.

Evolution, in mathematics, the process of extracting the roots of numbers of quantities.

Ewald, Georg Heinrich August von, a German Orientalist and Biblical critic; born in Gottingen, Nov. 16, 1803. After studying at the university there, in 1827 he became extraordinary, in 1831 ordinary Professor of Theology, and in 1835 Professor of Oriental Languages. In 1837 he lost his chair at Gottingen on account of his protest against the king's abrogation of the liberal constitution, became Professor of Theology at Tubingen, but in 1848 returned to his old chair at Gottingen. When Hanover was annexed by Prussia in 1866 he became a zealous defender of the rights of the ex-king. He died in Gottingen, May 5, 1875.

Ewald, Herman Frederik, a Danish novelist; born in Copenhagen, Dec. 13, 1821.

Ewald, Johannes, a Danish poet; born in Copenhagen in 1743. After studying theology at Copenhagen University he ran away and enlisted in the Prussian service, which he soon deserted for the Austrian. On his return to Copenhagen an elegy which he wrote on the death of Frederick V. of Denmark was received with general admiration, and awoke in himself the consciousness of poetic talent. His reputation rapidly increased with the publication of his tragedies, his odes and songs. He died in Copenhagen, March 17, 1781.

Ewbank, Thomas, an American scientist; born in Durham co., England, March 11, 1792; in 1836 retired from commercial life for literary and scientific work. He died in New York, Sept. 16, 1870.

Ewell, Richard Stoddard, military officer; born in Georgetown, D. C., Feb. 8, 1817; was graduated at the United States Military Academy in 1840; served in the cavalry on the frontier, and during the Mexican War with Scott from Vera Cruz to the City of Mexico; and was promoted captain for gallantry and meritorious conduct at Contreras and Churubusco. At the outbreak of the Civil War he resigned his commission in the National army; joined the Confederates; and was actively engaged throughout the war. He took part in the Maryland campaign and in the battles of Bull Run, Gettysburg, and the Wilderness, and attained the rank of Lieutenant-General. After the war he retired to private life. He died in Springfield, Tenn., Jan. 25, 1872.

Ewers, Ezra P., an American military officer; born in New York; entered the army in January, 1862; was promoted 2d lieutenant in 1863; 1st lieutenant in 1864; captain of the 37th Infantry in 1866; transferred to the 5th Infantry in 1869; promoted major of the 9th Infantry in 1893; lieutenant-colonel in 1897; commissioned Brigadier-General of volunteers in December, 1898; and placed in command of the troops in San Luis, Cuba. During the Civil War he distinguished himself at Hoover's Gap and in the battle of Chattanooga.

Ewing, Hugh Boyle, an American soldier; born in Lancaster, O., Oct. 31, 1826; son of Thomas Ewing; educated at the United States Military Academy. He served through the Civil War, becoming a brevet Major-General; and was United States Minister to The Hague, 1866–1870.

Ewing, Thomas, an American statesman; born near West Liberty, Va., Dec. 28, 1789; was graduated at the Ohio University in Athens in 1815; admitted to the bar in 1816; and practised law for 15 years. He was a United States Senator from Ohio in 1831–1837 and 1850–1851; Secretary of the Treasury under President Harrison in 1841; and Secretary of the Interior under President Taylor in 1849. In the United States Supreme Court he ranked among the foremost lawyers of the nation. He died in Lancaster, O., Oct. 26, 1871.

Excavator, an apparatus used in making docks, railway cuttings, canals, etc.

Excellency, a title given to ambassadors and plenipotentiaries, governors of colonies, the President of the United States, etc.

Excelsior Geyser, a geyser in the Yellowstone National Park, and one of the largest in the world. It has thrown a column of water to a height of 200 to 300 feet.

Exchange, the act of exchanging, or giving one thing for another; or that which is so given. In commerce, a place where merchants, brokers, etc., meet to transact business; generally contracted into 'Change. The institution of exchanges dates from the 16th century. They originated in the important trading cities of Italy, Germany, and the Netherlands, from which last-named country they were introduced into England. In some exchanges only a special class of business is transacted. Thus there are stock exchanges, corn exchanges, coal exchanges, cotton exchanges, etc.

Course of exchange, the current price of a bill of exchange at any one place as compared with what it is at another. If for $500 at one place exactly $500 at the other must be paid, then the course of exchange between the two places is at par; if more must be paid at the second place, then it is above par at the other; if less, it is below it. Arbitration of exchange, the operation of converting the currency of any country into that of a second one by means of other currencies intervening between the two. In arithmetic, a rule for ascertaining how much of the money of one country is equivalent in value to a given amount of that of another. In law, it is a mutual grant of equal interests, in consideration the one for the other.

Exchequer, in Great Britain the department which deals with the moneys received and paid on behalf of the public services of the country. The public revenues are paid into the Bank of England (or of Ireland) to account of the exchequer, and these receipts as well as the necessary payments for the public service are under the supervision of an important official called the controller and auditor-general. the payments being granted by him on receipt of the proper orders proceeding through the treasury. The public accounts are also audited in his department.

Exchequer, Court of, an ancient English court of record, established by William the Conqueror, and intended principally for the care and collection of the royal revenues. It was one of the supreme courts of common law, and is said to derive its name from the chequered cloth, resembling a chess-board, on which the sums were marked and scored with counters. The judges of this court were the chief baron and five junior or puisne barons. This court has been merged in the High Court of Justice. In Canada there is a Court of Exchequer for the Dominion.

Exchequer Bills, bills of credit issued by authority of the British Parliament as a means of raising money for temporary purposes. They are of various sums — £100 or any multiple of £100 — and bear interest (generally from 1½d. to 2½d. per diem on £100) according to a rate fixed at the beginning of each year. These bills pass from hand to hand as money, and form a principal part of the public unfunded debt of Great Britain. Exchequer bonds are similar, but they run for a definite number of years at a fixed rate of interest.

Excommunication, a word denoting exclusion, whether temporary or permanent, from fellowship in religious rites, involving also, where participation in such rites is required in the civil order, privation of the rights of citizenship. It is not peculiar to the Biblical religions, but is found in most of the systematized cults, whatever their origin.

The early Christian excommunication was primarily, as the word denotes, exclusion from communion in the eucharist and the agape, or love-feast, including also suspension from office in the case of clerical offenders; and it was distinguished as major and minor, each having various degrees of severity. Various civil disabilities attended excommunication.

Islam forms an exception to the almost universal incidence of the practice of excommunication. Under the Moslem code every religious offense carries with it a temporal penalty, such as fines, scourging, stoning, or other mode of death, and only in this last manner can an offender be cut off from the congregation.

Exfoliation, in surgery, the process by which a thin layer or scale of dead bone separates from the sound part.

Exhibition, Industrial, an exhibition of works of industry and art for the purpose of exciting public interest and promoting trade and manufactures, now most commonly called exposition.

Exmouth, Edward Pellew, Viscount, a British naval officer; born in 1757. He went to sea at the age of 13, served as midshipman in the "Blonde" frigate during the American war, and greatly distinguished himself at Lake Champlain. In 1804 he was sent to take the chief command on the East India station, in the "Culloden," and here he remained till 1809, when he had attained the rank of vice-admiral. In 1814 he was made Baron Exmouth with a pension of £2,000 per annum. In 1816 he proceeded to Algiers in command of the combined fleet of 25 English and Dutch ships to enforce the terms of a treaty regarding the abolition of Christian slavery which the dey had violated. He bombarded the city for seven hours, and inflicted such immense damage that the dey consented to every demand. Twelve hundred Christian slaves were by this exploit restored to liberty. Lord Exmouth was raised to the dignity of a viscount for this service. In 1821 he retired to private life, and he died Jan. 23, 1833.

Exodus, the name given in the Septuagint to the second book of the Pentateuch, because it describes the departure of the Israelites from Egypt.

The contents of the book are partly historical, describing the departure of the Israelites from Egypt, and partly legislative, describing the promulgation of the Sinaitic law.

Exophthalmic Goiter, enlargement with turgescence of the thyroid gland.

Exorcism, the casting out of evil spirits by certain forms of words or ceremonies. An opinion prevailed in the ancient Church that certain persons, those particularly who were afflicted with madness and epilepsy, were possessed by evil spirits. Over such persons forms of conjuration were pronounced, and this act was called exorcism. There were even certain men who made this a regular profession, and who were called exorcists. Exorcism still makes a part of the beliefs of some Churches. In the Roman Catholic Church exorcist is one of the inferior orders of the clergy.

Exotic, belonging to foreign countries; a term used especially of plants. Exotic plants are such as belong to a soil and climate entirely different from the place where they are raised. They are nearly always greenhouse or hothouse plants.

Expansion, in physics, is the enlargement or increase in the bulk of bodies, in consequence of a change in their temperature. This is one of the most general effects of heat, being common to all bodies whatever, whether solid or fluid. It varies greatly in different bodies.

Expatriation, the act or state of banishment from one's native country; also the voluntary renunciation of the rights and liabilities of citizenship in one country to become the citizen or subject of another.

Expectation, in the doctrine of chances, the value of any prospect of prize or property depending on the happening of some uncertain event. A sum of money in expectation on a certain event has a determinate value before that event happens. If the chances of receiving or not receiving $100, when an event arrives, are equal; then, before the arrival of the event the expectation is worth half the money. Expectation of life, the probable duration of the life of individuals of any given age. A rough estimate of anyone's expxectation of life is made by calculating two-thirds of the difference between his or her present age and 80.

Expectation Week, the week, or rather the nine days, which elapsed between the ascension of Jesus and the Pentecostal effusion of the Spirit, because during that interval the apostles and early Church waited in expectation that the promised Comforter would come.

Expectorants, in pharmacy, medicines which favor the discharge of mucus from the windpipe and air-passages of the lungs. Such are the stimulating gums and resins, squills, ipecacuanha, and the like.

Expert, a person eminently skilled in any particular branch or profession; specifically, a scientific or professional witness who gives evidence on matters connected with his profession, as an analytical chemist or a person skilled in handwriting.

Expilly, Jean Charles Marie, a French historian; born in Salon, Bouches-du-Rhone, Sept. 8, 1814. The years 1852–1858 he spent in South America studying the state of the country, writings on which gave him great distinction. He died in Tain, Drome, Feb. 12, 1886.

Explosion, a sudden bursting, generally due to the rapid production of gaseous matter from solids or liquids. Thus the explosion of gunpowder is due to the sudden formation and expansion of gases into which the powder is converted by chemical agency. Explosions are often caused by the elastic force of steam confined in boilers, etc.

Explosives, compounds practically available in war, for mining and in general use for the sudden development of force. The majority of explosives contain oxygen, nitrogen, or chlorine, and especially carbonic acid, which is liberated in immense quantities and in an almost inconceivably short space of time. They comprise gunpowder, nitroglycerine, dynamite, gun-cotton, etc.

Ex Post Facto Law, one that takes effect retroactively; that is, on transactions which took place before its passage. The provision in the Constitution of the United States, Article

I, section 9, clause 3, that "no . . . ex post facto law shall be passed," has been interpreted to refer only to crimes, and in that sense the words are commonly used. The following have been decided to come within the scope of the phrase: Every law that makes an action done before its passage, and innocent when done, criminal, and punishes such action; every law that aggravates a crime, or makes it greater than when committed; every law that changes the nature of the punishment, or makes it greater than at the time the act was committed; every law that alters the rules of evidence so as to make it easier to convict the offender; every law that, while not avowedly relating to crimes, in effect imposes a penalty or the deprivation of a right; every law that deprives persons accused of crime of some lawful protection to which they have become entitled, as a former acquittal. Such laws are therefore unconstitutional so far as they apply to acts committed before their passage.

Express, in the United States, a system organized for the speedy transmission of parcels or merchandise of any kind, and their safe delivery in good condition. It originated in the trip made from Boston to New York by William Frederick Harnden (1813–1845), the first "express-package carrier," March 4, 1839. The project recommending itself to business men, competing companies sprang up rapidly, and express lines were established in all directions. Adams & Co.'s California express was started in 1849; Wells, Fargo & Co.'s in 1852; the American-European Co. was created in 1855. As railways extended, the early "pony express" disappeared, and individual companies now have contracts with the several railway companies, their business over these routes being held to be entitled to the protection of the courts against any efforts to dispossess them. Many of the rival companies were amalagamated, and most of the successful concerns are now joint-stock institutions, the industry employing capital aggregating more than $50,000,000.

Extenuating Circumstances, in legal practice, those circumstances, in connection either with the position of the prisoner or with the act alone, which are taken into consideration by the court in mitigation of the punishment. The previous good character of the person convicted may always be proved as a circumstance giving him some claim to leniency of punishment. Besides character, there are other circumstances, the presence of which in a case sometimes serves to mitigate the sentence, sometimes to take the act done out of the category of crime altogether. One is youth. Defective mental power in the person convicted will always be considered in determining the severity of his sentence. Such disease of mind as prevents a man from knowing that the act he does is wrong will excuse him from the consequences of an act otherwise criminal. Drunkenness, when voluntary, is not held an extenuating circumstance, but if a man is made drunk by the fraudulent administration of drugs, and while under their influence kills another, not knowing what he does, the act is not a crime. It is a good excuse for persons charged with crime that they have been compelled by others by threats of death or great violence to do the criminal act. Ignorance of the law is no excuse for an offense. Nor, in general, will ignorance of facts be a good excuse, though in particular circumstances it might form a valid defense.

Extradition, the act by which a person accused of a crime is given up by the government in whose territories he has taken refuge to the government of which he is a subject. Conventions have been entered into by the United States with almost all civilized countries for the apprehension and extradition of persons charged with particular offenses, especially those of the most heinous stamp.

Extravaganza, in music, the drama, etc., a species of composition designed to produce effect by its wild irregularity and incoherence; differing from a burlesque in being an original composition and not a mere travesty.

Extravasation, an escape of some fluid, as blood or urine, from the vessel containing it.

Extreme Unction, since the 12th century, one of the seven sacraments of the Roman Catholic Church. It is performed in cases of mortal disease by anointing in the form of a cross, the eyes, ears, nose, and mouth.

Eyck, Hubert van, a noted Flemish painter; born in Maaseyck, Belgium, in 1366. It has been claimed that he and his brother Jan were the inventors of oil painting. For transparent and brilliant coloring and minute finish their works have never been surpassed. The only painting that can now certainly be assigned to Hubert is the altar-piece with folding doors, "The Adoration of the Lamb," begun by him and finished by Jan, presented to the Cathedral of St. Bavon. Hubert died in Ghent, Flanders, Sept. 18, 1426.

Eyck, Jan van, a Flemish painter, brother of Hubert; born in Maaseyck, about 1386. He was court painter of Philip the Good, Duke of Burgundy, and practised his art chiefly at Bruges, where he died July 9, 1440.

Eye. The visual apparatus consists of the globe of the eye, of the muscles which move it, and of its appendages, which are the eyelids and eyebrows, and the lachrymal apparatus. The eye in its different parts is subject to various diseases and affections, some of them common to other parts of the body, others peculiar to itself. When the transparency of the cornea, the crystalline lens, or any of the humors, is destroyed, either partially or entirely, then will partial or total blindness follow, since no image can be formed upon the retina; but although all the humors and the cornea be perfectly transparent, and retain their proper forms, which is likewise necessary to distinct vision, yet, from weakness or inactivity of the optic nerve, or injury of the central ganglia with which it is connected, weakness of sight or total blindness may ensue. To the first class belong those diseases called cataracts, ophthalmia, etc., and to the second amaurosis, or gutta serena, etc. Although a person may not be under the influence of any of these diseases, yet defective vision may arise from the eyeball being so elongated that an image is formed before the rays reach the retina (a defect known as short sight or myopia), in which case distinct vision will be procured by interposing a concave lens between the eye and the object of such a curvature as shall cause the rays that pass through the crystalline lens to meet on the retina; or the eyeball may be short, so that the opposite condition arises, a defect which is corrected by convex lenses.

Eylau, a town of 3,546 inhabitants, 23 miles S. of Konigsberg by rail. Here Napoleon encountered the allies — Russians and Prussians — under Benningsen, Feb. 8, 1807. Darkness came on while the contest was still undecided; but as Napoleon had a considerable force of fresh troops close at hand, the allies retired during the night on Konigsberg. Their loss is estimated at about 20,000; that of the French at 10,000, but must have been considerably greater. This place is called Preussisch-Eylau, to distinguish it from Deutsch-Eylau, a town of 4,574 inhabitants, 89 miles N. E. of Bromberg.

Eyma, Louis Xavier, a French writer born in St. Pierre, Martinique, West Indies, Oct. 16, 1816. After a tour through the United States, he returned to France and published several works dealing with America. He died in Paris, March 29, 1876.

Eyre, Edward John, an Australian explorer and colonial governor; born in August, 1815. He emigrated to Australia at the age of 17. In 1840 he failed in an attempt to explore the region between South and Western Australia, though he discovered Lake Torrens. The task which he had set himself, however, he accomplished in 1841. In 1846 he became lieutenant-governor of New Zealand, and in 1852 of St. Vincent in the West Indies. In 1862 he was appointed governor of Jamaica, where in 1865 negro disturbances broke out. The outbreak was suppressed with sharp, stern severity, Eyre was recalled. On his return he was prosecuted; and eventually in 1872 the government refunded to Eyre the costs of his defense, the prosecution not being sustained. After his recall he lived in retirement. He died Dec. 1, 1901.

Eyra, in Scandinavian mythology, the physician of the gods.

Ezekiel, one of the greater prophets to whom is attributed one of the larger prophetic books of the Old Testament, the visions and utterances which it contains being expressly attributed, in the work itself, to Ezekiel. He was the son of Buzi, a priest (i: 3). He was carried captive, in the time of Jehoiachin, 595 B. C., about 11 years before the destruction of Jerusalem under Zedekiah (xl: 1). His prophecies are mostly in chronological order, those excepted which are launched against foreign nations. There is no direct quotation from Ezekiel in the New Testament, but there are a few allusions to his utterances, especially in the Book of Revelation, which, in the concluding portion, distinctly looks back to the temple arrangements prophesied in the last chapter of Ezekiel. The genuineness and authenticity of the prophecies of Ezekiel have not been seriously impugned either in the Jewish or Christian Church.

Ezra, a man of Judah (I Chron. iv: 17). Also the head of one of the 22 courses of priests who returned from captivity along with Zerubbabel, the civil governor of the exiles, and Jeshua, their high priest (Neh. xii: 2). He is called in Neh. 2 Azariah. Also the celebrated priest, whose patriotic and priestly services to the Jews are detailed in the book bearing his name.

Ezra, Book of, an Old Testament book, arranged in the English Bible between II Chronicles and Nehemiah. The name Ezra is by most persons held to denote that he was the author of the book. It may, however, signify no more than that the doings of Ezra are the main theme of the book, which is certainly the case. The illustrious personage so designated was a priest descended from Phinehas, the son of Aaron. His immediate father was Seraiah. He was a ready scribe in the law of Moses, to which he was passionately attached (vii: 6). An exile in Persia, he so commended himself to the then reigning monarch, as to obtain from him a commission to lead the second expedition of Jews back to their own land. The enterprise began about 458 B. C. Subsequently he seems to have returned to the king, but we find him again at Jerusalem, this time, however, exercising only priestly functions under Nehemiah. Where he died is uncertain. The period which the book spans is about 80 years, viz., from the first of Cyrus, 536 B. C., to the eighth of Artaxerxes Longimanus, 456 B. C.; the reigns embraced are those of Cyrus, Cambyses, Smerdis, Darius, Hystaspis, Xerxes, and part of that of Artaxerxes.

F

F f is the sixth letter of the English and other alphabets of Western Europe, as it was also in the Latin alphabet, from which they are derived.

Faber, Frederick William, an English hymn-writer; born in Calverley, England, June 28, 1814. He was long in the Anglican priesthood, and wrote hymns of singular sweetness and spirituality; going over at last to Rome and voicing his new fervor in much sacred song. Among his most familiar hymns are: "Hark, hark, my soul!"; "O Paradise! O Paradise!"; "There's a Wideness in God's Mercy"; etc. He died in the Oratory, Brompton, Sept. 26, 1863.

Fabian, belonging or relating to the famous Roman family, or clan, the Fabian, used especially in the military phrase Fabian tactics, to denote tactics the chief point of which is to weary and exhaust the enemy. By such measures Fabius Maximus greatly harassed Hannibal in the Second Punic War.

Fabie, Francois Joseph, a French poet; born in Durenque, France, Nov. 3, 1846. He has filled important chairs in different colleges. He attained distinction as an author.

Fabius, the name of one of the oldest and most famous families of Rome, every member of which was massacred at Cremera, 478 B. C., except Quintus Fabius Vibulanus, who became one of the decemvirate. After him are mentioned Fabius Ambustus, dictator, 350 B. C. Fabius Rullianus, to whom name Maximus was added, twice dictator, conqueror of the Samnites and Etruscans, 323–280 B. C. Fabius Gurges, son of the preceding, consul of Rome. Fabius Pictor, the first writer of Roman history, 3d century B. C. Fabius Maximus Verrucosus, considered the greatest of his family, surnamed "Cunctator," "the Delayer," from his system of warfare. Died 203 B. C.

Fable, in literature, a term applied originally to every imaginative tale, but confined in modern use to short stories, either in prose or verse, which are meant to inculcate a moral lesson in a pleasant garb.

The oldest fables are supposed to be the Oriental; among these the Indian fables of Pilpay or Bidpai, and the fables of the Arabian Lokman, are celebrated. Æsop is well known among the Greeks, and was imitated by Phædrus among the Latin writers. Bodmer has published German fables of the time of the Minnesingers. The first known German fabulist is Stricker, who belongs to the first half of the 13th century. The most successful of German fable writers is undoubtedly Lessing. In the 17th century Gay among English, and La Fontaine among the French were distinguished. Among the most interesting modern productions in this department of literature the fables of the Russian, Ivan Kriloff, deserve special mention. American journalism has in recent years made admirable use of the fable in the arraignment of social follies and political wrongs.

Fabre, Amant Joseph, a French author; born in Rodez, France, Dec. 10, 1842 (or 1843). A drama, "Joan of Arc," made his name most widely known; his other works being largely represented by such books as "Washington, the Liberator of America."

Fabre, Ferdinand, a French novelist; born in Bedarieux, France, in 1830. He died Feb. 16, 1898.

Fabre, Jean Raymond Auguste, a French poet, brother of Ferdinand; born in Jaujac, France, June 24, 1792. He died in Paris Oct. 23, 1839.

Fabre d' Eglantine, Philippe Francois Nazaire, a French poet; born in Carcassonne, France, Dec. 28, 1755. The "Eglantine" denotes the prize, a golden wild rose, which he won in the "floral plays" at Toulouse. He was guillotined in Paris, April 5, 1794.

Fabriano, Gentile da, an Italian painter; born in Fabriano, Italy, about 1370. He made great advances, both in the theory and practice of his art, beyond his predecessors, and was named "The Master of Masters." Many of Fabriano's best works have perished; among them his famous altar piece in the church of San Niccolo, France. He died in Rome about 1450.

Facade, the face or front of any building of importance. It may be applied to any side of a large quadrangular building embellished with sufficiently striking architectural features, but it is usually confined to the principal front, in which the chief entrance is most frequently, if not always, situated.

Facetiæ, humorous sayings, witticisms, jests. There have been many collections of such.

Facial Angle, an anatomical term for the angle contained between two imaginary lines, one from the most prominent part of the forehead to the anterior extremity of the alveolar process of the upper jaw, opposite to the incisor teeth; the other from the external auditory foramen to the same point, serving to measure the elevation of the forehead. This angle is of great service in ethnology, but its magnitude is not an infallible criterion of the intellectual capacity of an individual.

Facial Nerve, a nerve of the seventh pair of cranial nerves, a motor nerve which supplies the muscles of expression on either side of the face. Paralysis of this nerve produces facial paralysis, the result of which is that the affected side is smooth, unwrinkled and motionless, the eyelids are wide open and cannot be closed, and the muscles of the sound side drag the mouth in that direction.

Facies, the anterior part of the skull, the face; in geology and zoölogy the general aspect of an assembly of animals or plants, which is characteristic of a particular locality or period of the earth's history.

Faction, a clan, a society, a party, in Church or State, especially a party in a state combined or acting in union in opposition to the established government; usually applied to a minority, but it may be applied to a majority; a party combined to promote their own views or purposes even at the expense of order and the public good.

Faculty. In the United States, the term faculty indicates the body of persons who are intrusted with the government and instruction of a university or college as a whole, comprising the president, professors, and tutors. It is also used for the body of masters and professors of each of the several departments of instruction in a university; as, the law faculty, etc.

Fadienskoi, a Russian island of the Arctic Ocean, in the province of Yakatsk. It is 100 miles long by about 40 broad, and is inhabited.

Faed, Thomas, a Scotch artist; born in Kirkcudbright in 1826; was educated at the School of Design in Edinburgh. He adopted a style which became very popular, his paintings being from familiar scenes of home life. He died in London, Aug. 17, 1900.

Faenza, a city of Italy, 20 miles from Ravenna. It was once well known for its manufacture of colored and glazed earthenware called Faience. Pop. 36,100.

Fagot, a bundle of sticks or small branches of trees bound together. In times of religious persecution, the fagot was a badge worn on the sleeve of the upper garment of such persons as had abjured heresy, being put on after the person had publicly carried a fagot to some appointed place, by way of penance. To leave off the wearing of this badge was sometimes regarded as a sign of apostasy. Among military men in England, fagots were persons hired by officers whose companies were not full, to hide the deficiencies of the company. Fagot votes, in English politics, were votes created by the partitioning of an estate into numerous small tenements, which were let to persons at an almost nominal rent, upon condition of voting at elections, according to the dictates of the lessor.

Faguet, Emile, a French critic; born in La Roche-sur-Yon, France, Dec. 17, 1847.

Fagus, the beech, a genus of trees, one of the tallest and most majestic trees of the forest, abounding in the Middle, Western, and Southern States, in deep, moist soil, and in a cool atmosphere. The trunks of the trees are frequently 8 to 11 feet in circumference, and more than 100 feet high. The roots do not descend deeply into the soil, but extend to a considerable distance close under the surface. There are several beautiful varieties in cultivation, with purple foliage, silver foliage, etc.

Fahrenheit, Gabriel Daniel, a German natural philosopher; born in Dantzic, Prussia, May 14, 1686. He was a maker of scientific instruments, and in 1720 introduced the use of mercury instead of spirits of wine in the construction of the thermometer. He died in 1736.

Faidherbe, Louis Leon Cesar, a French military officer; born in Lille, France, June 3, 1818. He published books on the language, geography, and archæology of Northern Africa. He died in Paris, Sept. 29, 1889.

Faillon, Michel Etienne, a French historical writer; born in Tarascon, France, in 1799. He was a Sulpician and visited Canada in 1854 to investigate the houses of that order. He wrote a comprehensive history of the French in Canada. He died in Paris, Oct. 25, 1870.

Faineants, or **Do-nothing Kings,** the name given in French history to some of the Merovingian sovereigns, who were the puppets of the mayors of the palace.

Faience, a fine kind of pottery originally made in imitation of majolica, and afterward with characteristics of its own. This ware, having passed through the fire, preserves a certain amount of porosity, and is then covered with a glaze.

Fainting, syncope, a sudden suspension of the heart's action, of respiration, internal and external sensation, and voluntary motion. This morbid state generally continues from a few seconds to a minute, but in some cases it lasts for hours and even days. Organic and other diseases of the heart, the pericardium, and the large arteries, or malformation of these parts tend to produce, or at least to predispose, to syncope. It can be produced by pain, loss of blood, other evacuations when too copious, objects offensive to sight or smell, the impure air generated in crowded public buildings, etc. It rarely ends in death. It is more common in females than in men, and recovery is more rapid in the recumbent position.

Fair, a larger species of market, which is held at more distant intervals, and sometimes devoted to one species of merchandise, sometimes to several. In the earlier stages of society, and in inland countries, where the facilities for commerce are comparatively circumscribed, the bringing together of commodities and dealers at certain times and in convenient places is of the utmost importance; and for this purpose various privileges have been annexed to fairs, and numerous facilities afforded for the disposal of property in them. The great fair of Nijni-Novgorod, in Russia, is the most important in Europe, being frequented by buyers and sellers from different parts of Europe and Northern and Central Asia. Another celebrated Russian fair is held at Kiachta, on the Chinese frontier, where the greater part of the commerce between the Chinese and Russian empires is transacted. A large fair is held at Mecca during the resort of pilgrims to that place. In the United States, fairs for charitable and religious purposes are frequently held in all parts of the country, at which a great variety of articles, collected by donation or purchase, are exposed for sale. Important fairs for the competitive exhibition of live-stock and various industrial products are held by numerous organizations throughout the different states. These are merely competitive exhibitions of animal and industrial products, and have no commercial character. Exhibitions of wide scope and elaborate detail, and of national or international character, are known as world's fairs or expositions.

Fairbairn, Sir William, a Scotch civil engineer; born in Kelso, Scotland, Feb. 19, 1789; entered business in Manchester, England, in 1817. He constructed the first iron ship in England and afterward his firm built over 100 iron vessels. He was associated with Robert Stephenson in designing and building the great tubular bridge over Menai Strait. He died Aug. 18, 1874.

Fairbank, Calvin, an American clergyman; born in Pike, N. Y., Nov. 3, 1816; was graduated at Oberlin College in 1844. He was an ardent abolitionist, and during 1837–1839, aided 23 slaves to escape across the Ohio river. In 1843 he raised $2,275 to secure the liberty of a nearly white slave girl who was to be sold at auction at Lexington, Ky. Later he was detected in violation of the Fugitive Slave Law, and sentenced to 15 years' imprisonment at Frankfort, where he was cruelly treated. In 1864 he was set at liberty after spending more than 17 years in jail. He died in Angelica, N. Y., Oct. 12, 1898.

Fairbanks, Henry, an American inventor; born in St. Johnsbury, Vt., May 6, 1830; graduated at Dartmouth College, and at Andover Theological Seminary. He was ordained in 1858; held pastorates in Burke and Barnet, Vt., and in 1859 was Professor of Physics, and later of History, at Dartmouth. He became identified with E. & T. Fairbanks & Co., in 1868; and subsequently gave much of his time to mechanical experiments, patenting several inventions relating to the manufacture of scales.

Fairbanks, Thaddeus, an American inventor; born in Brimfield, Mass., Jan. 17, 1796; settled in St. Johnsbury, Vt., in 1815. In June, 1831, he patented the platform scales bearing his name. He died in St. Johnsbury, Vt., April 12, 1886.

Fairchild, Ashbel Green, an American clergyman; born in Hanover, N. J., May 1, 1795. He wrote many contributions to the religious press. He died in Smithfield, Pa., in 1864.

Fairchild, Charles Stebbins, an American financier; born in Cazenovia, N. Y., April 30, 1842; graduated at Harvard University; admitted to the bar; became deputy attorney-general of New York, and attorney-general. After spending some time in Europe he settled in New York city, where he practised law till 1885, when he was appointed by President Cleveland Assistant Secretary of the Treasury, an office he held till 1887, when he succeeded Secretary Manning. Subsequently he became president of the New York Security and Trust Company, member of the Monetary Commission of 1897, etc.

Fairchild, Herman Le Roy, an American educator; born in Montrose, Pa., April 29, 1850; graduated at Cornell University; taught for two years at Kingston, Pa.; spent several years in scentific work in New York city; became president of the Rochester Academy of Science in 1889, secretary of the Geological Society of America in 1890, general secretary in 1894, and vice-president in 1898.

Fairchild, James Harris, an American educator; born in Stockbridge, Mass., Nov. 25, 1817. He was elected president of Oberlin College in 1866, after a service of 26 years as tutor, Professor of Languages, Professor of Mathematics, and Professor of Moral Philosophy and Theology.

Fairchild, Lucius, an American military officer; born in Kent, O., Dec. 27, 1831; removed to Wisconsin in 1846, but returned in 1855. At the beginning of the Civil War he enlisted as a private and was soon made captain. He led the charge up Seminary Hill at Gettysburg, where he lost his left arm. He was promoted Brigadier-General in 1863, but resigned to serve as Secretary of State of Wisconsin. He was afterward elected governor. In 1886 he was chosen commander-in-chief of the Grand Army of the Republic. He died in Madison, Wis., May 23, 1896.

Fairfax, Donald McNeill, an American naval officer; born in Virginia, March 19, 1821; was appointed a midshipman in the navy, and rose to the rank of commander. During the Mexican War he participated in the capture of Mazatlan and Lower

California. In 1861 he had personal charge of the transfer of Messrs. Mason and Slidell and their secretaries from the "Trent," a British mail ship, to the "San Jacinto." He later took part in the chief naval operations in Charleston harbor; was promoted rear-admiral, July 11, 1880; and retired Sept. 30, 1881. He died in Hagerstown, Md., Jan. 10, 1894.

Fairfax, Thomas, Lord, a British military officer; born in Denton, England, Jan. 17, 1611. He was the eldest son of Ferdinand, Lord Fairfax. On the first breaking out of the civil discontents, following the example of his father, Fairfax embraced the popular side, and ranged himself as one of the firmest opponents of the royal party. On the commencement of hostilities he was commissioned general under his father, who was made commander in the North. After the passing of the "Self-denying ordinance," Fairfax was appointed general, conjointly with Cromwell. He and Skipton commanded the main body of the Parliamentary army at the battle of Naseby. On the Restoration he withdrew altogether from active life, retiring to his home in the country. He wrote "Short Memorials" of his life, etc. He died near York, England, Nov. 12, 1671.

Fairfax, Thomas, 6th Baron of Cameron; born in England in 1691; was educated at Oxford. Disappointed in England, he came to America and settled in Virginia. There in the midst of 10,000 acres of land he built an unpretentious lodge in which he lived a solitary and secluded life. It was there that Washington first met him. Between the two there sprang up a warm friendship. He died at his lodge, Greenway Court, in Frederick co., Va., Dec. 12, 1782.

The 11th Lord Fairfax and Baron of Cameron who succeeded his brother in the baronetcy in 1869, and who died in Northampton, Md., Sept. 28, 1900, made no claim to the title. His successor, the 12th Lord Fairfax, has become a resident of England.

Fairfield, a town and port of entry in Fairfield co., Conn., on Long Island Sound, 52 miles N. E. of New York. It contains a stone powder house and four other buildings constructed during the Revolutionary period. The town was founded in 1639. In 1779 it was burned by Governor Tryon. Pop. (1890) 3,868; (1900) 4,489.

Fairfield, Sumner Lincoln, an American author; born in Warwick, Mass., June 25, 1803. He began the publication of the "North American Magazine" in 1833. He died in New Orleans, La., March 6, 1844.

Fair Haven, a town in Bristol co., Mass.; on Buzzard's bay, at the mouth of the Acushnet river, 60 miles S. of Boston. The British were here repulsed by Maj. Israel Fearing on Sept. 7, 1788. Pop. (1900) 3,567.

Fair Isle, a small island in the North Atlantic, lying between the Shetland and Orkney Isles, 22 miles from Sumburgh Head. It is 4 miles long by a breadth of 2½. Here (1588) the Duke of Medina, admiral of the Spanish Armada, was shipwrecked.

Fair Trade, an expression used by certain persons who, professing to be free traders, would still tax goods imported from any country which refuses to accept the principles of free trade. Free traders consider this view as protectionist. The issue is now very prominent in England owing to the open stand of Joseph Chamberlain in favor of "fair trade," and his resignation from the Cabinet on account of that advocacy.

Fairy, a fay; an imaginary being or spirit, supposed to assume a human form, dance in meadows, steal infants, and play a variety of pranks; an enchantress. The fairy superstition belongs to modern Europe. We find nothing like it among the idolatries of the heathen referred to in Scripture. In classical mythology there is nothing nearer to it than the nymph of the fountain or grove among the Greeks. The pure fairy tales first became popular in the latter part of the 17th century, and are more extensive and popular in Germany than in any other country at the present time.

Fairy Rings, or **Circles,** rings occasionally observed in pastures, and usually attributed by the peasantry of Western Europe to the dancing of the fairies. They are occasioned by the growth of certain kinds of fungi, which, proceeding outward from a center, render the soil for a time unfitted for the nourishment of grass.

Faith, that assent or credence which we give to the declaration or promise of another, on the authority of the person who makes it. The term faith is used in theology for the assent of the mind to the truth of what has been revealed to us in the Holy Scriptures; more particularly that living reception of truth by the heart by which we see our sinfulness in the sight of God and are led to flee to Christ for salvation.

Fakir, a Mohammedan religious mendicant. Among Anglo-Indians, and even among the Hindus, it is often used for a native mendicant of any faith; but specifically it is one of the Mohammedan religion; and are regarded by the unthinking Mohammedan multitude as men of great sanctity.

In the United States, fakir is a slang name given to one of the numerous street merchants in large towns and cities.

Falaise, a town of France, department of Calvados, 15 miles from Caen. The castle, which stands on a precipice, and in which William the Conqueror was born in 1024, is in ruins, with the exception of a tower.

Falb, Rudolf, an Austrian meteorologist; born in Styria, Austria, about 1843; became famous as a prognosticator of earthquakes.

Falcon, Faucon, Faucoun, or **Faulcon,** a name of various birds of prey, belonging to the same family as the hawks and eagles. The best-known species is the peregrine falcon, so named from its wonderful distribution over the earth's surface. It has always been held in the greatest esteem for falconry. Technically the female alone is termed a falcon, the male, which is smaller and less courageous, being known as a tersel or tiercel.

Falconer, Hugh, a British palæontologist; born in Forres, Morayshire, Feb. 29, 1808; died in London, Jan. 31, 1865.

Falconet, a little falcon; a name applied to a genus of tiny falcons peculiar to the East Indies. One is found in the Himalayas and Burmese countries. Not one of these little hawks is seven inches in length; they the said to be used by native chiefs for hawking insects being thrown from the hand like a ball. The word was also formerly applied to a small piece of ordnance.

Falconidæ, a family of raptorial birds. They are all remarkable for strong and sharply-hooked bills, and most of them have sharp and powerful talons. In the eagles and falcons these characters are developed in the highest degree. In most, the female is larger than the male, and is much the more powerful bird.

Falconry, the pursuit of game by means of trained falcons or hawks.

Faliero, or **Falieri, Marino,** a Venetian noble; born about 1274, who succeeded Andrew Dandolo as Doge of Venice, in 1354. When he succeeded to the office of doge, he was 80 years of age, and had a young and beautiful wife. He had enemies among the dominant nobility of Venice, and to avenge himself on them he entered into a conspiracy with the plebeians to overturn the government and massacre the patricians. On the night before it was to be carried into effect, the plot was discovered, and Faliero was beheaded April 17, 1355.

Falk, Paul Ludwig Adalbert, a noted German statesman; born in Metschkau, Germany, Aug. 10, 1827; graduated at the Medical Department of the University of Breslau; elected as a Liberal to the Prussian Diet in 1858. When the States of the German empire were consolidated he was appointed to codify the laws of the confederation; he presented to the Prussian Chamber the scheme of ecclesiastical legislation known as the "May Laws," because they were adopted in May, 1873. These laws were administered with such severity that a bitter religious conflict ensued which greatly impeded the development of the empire. He resigned from the ministry July 14, 1879; and was president of the Provincial Court of Westphalia from 1882 till his death, in Hamm, Germany, July 7, 1900.

Falke, Jacob von, a German art critic; born in Ratzeburg, Prussia, June 21, 1825. His administrative capacity placed many art galleries in ermany and Austria upon a sucessful basis. His writings are noable for both learning and judgment. Ie died in Vienna, June 12, 1897.

Falkland Isles, two large islands, vith a number of smaller ones surounding them, in the South Atlantic)cean. These islands were discovred by Davis in 1592, and came into he possession of the British in 1771. 'heir appropriation has been at times isputed, and they are still claimed y the Argentine Republic; but since 833 the British have held uninterupted occupancy of them. Capital, tanley; area, 4,741 square miles; op. (1901) 2,043, consisting mostly f Buenos Ayrean colonists.

Falkner, Roland Post, an Amerean statistican; born in Bridgeport, onn., April 14, 1866; graduated at ne University of Pennsylvania; was nstructor in accounting and statistics n the University of Pennsylvania and fterward Professor of Statistics. He erved also as statistician of the nited States Senate Committee of inance in 1891; as secretary of the nited States Delegation to the Inernational Monetary Conference; and s secretary of the conference in 1892.

Fall, The, a term used of the first n of Adam, and hence often called the fall of Adam," with which original sin" his posterity are held have had mysteriously to do; on hich account we often meet with the erm "the fall of man."

Fallacy, a term used in logic, eaning an unsound argument or ode of arguing, which, while appearng to be decisive of a question, is in eality not so.

Falling Off, in nautical language, ne movement or direction of the ship's ead to leeward of the point whither was lately directed; also, the angle ontained between her nearest aproach to the wind and her farthest eclination from it when preventing erself from rolling to windward, by judicious balance of canvas.

Fallmerayer, Jacob Philipp, a erman author; born in Tschotsch, n the Austrian Tyrol, Dec. 10, 1790. s an explorer of the Orient, his ame is international and his work uthoritative. He died in Munich, pril 26, 1861.

Fallopian Tubes, two ducts or canals floating in the abdomen, and extending from the upper angles of the womb to the pelvis. They were popularly but incorrectly believed to have been discovered by Fallopius.

Fallow, an agricultural term applied to land ploughed, but not sowed; left to rest after a year or more of tillage.

Fallow Deer, an animal of the deer kind, well-known from being preserved in a semi-domesticated state in many English parks.

Fallows, Samuel, an American clergyman; born in Pendleton, Lancashire, England, Dec. 13, 1835; graduated at the University of Wisconsin, minister of the Methodist Episcopal Church and later of the Reformed Episcopal Church. He served with distinction in the Civil War. Subsequently he preached at Milwaukee; was State Superintendent of Public Instruction in Wisconsin; regent of the University of Wisconsin, and president of Wesleyan University. He became rector of St. Paul's Reformed Episcopal Church in Chicago, and bishop in 1876; was president of the Illinois State Reformatory.

Fall River, a city and port of entry of Bristol co., Mass., at the mouth of the Taunton river, where it empties into Mount Hope Bay, 49 miles S. of Boston. The stream called Fall River is the outlet of Watuppa lake, and has a fall of 129 feet in less than half a mile, affording excellent water power. Fall River is the largest cotton-milling city in the United States. According to the Federal census of 1900 the city had 785 manufacturing establishments. The city was originally a part of Freetown, but was incorporated separately in 1803. Later it was called Troy, but its first name was restored in 1834. The city charter was granted in 1854 and in 1862 Fall River in Newport co., R. I., was annexed. Pop. (1900) 104,863.

Falmouth, a town in Barnstable co., Mass., on Buzzard's Bay, Vineyard Sound. It is best known as containing the Wood's Holl Station of the United States Fish Commission.

Falmouth, a seaport town of England, Cornwall county, at the mouth of the Fall river, 11 miles from

Truro. It has a good harbor and derives its chief importance from being a station of the boats carrying foreign mails.

Falster, one of the Danish islands in the Baltic, separated by narrow straits from Zealand, Moen and Laaland; area, 18 square miles; the pleasantest of all the Danish islands, well watered, richly wooded, and so prolific in fruit that it has been called the "orchard of Denmark." Capital, Nykjobing. Pop. 32,639.

Familiar Spirit, evil spirits which were supposed to attend and be at the service of a magician or other favored person. The belief is very ancient, and by the law of Moses such as had familiar spirits were put to death. Where Socrates speaks of his attendant demon, he is generally understood to refer to the inner feelings and promptings of his nature, and not to any familiar spirit. In Eastern countries the belief in familiar spirits is very general; and it was widely diffused over Europe in the Middle Ages. A favorite form assumed was that of a black dog. Jovius says that Cornelius Agrippa was always accompanied by a devil in the form of a black dog; and Goethe makes Mephistopheles first appear to Faust in this shape. The "slave of the lamp" mentioned in the "Arabian Nights" as serving Aladdin is a well-known illustration of this superstition.

Family, a household, including parents, children, and servants; the collective body of persons who reside under one roof, and under one head or manager; those who descend from one common ancestor; a tribe or race; kindred; as, the human family.

Family Compact, the name of several treaties. The treaty signed at the Escurial between Philip V. of Spain and Louis XV. of France, Nov. 7, 1733, is called by Spanish historians the First Family Compact; and the secret treaty of perpetual alliance between France and Spain, signed at Fontainebleau, Oct. 25, 1743, is termed by them the Second Family Compact. The celebrated treaty between the Bourbons of France and Spain (Louis XV. and Charles III.), known as the Family Compact, was concluded at Paris Aug. 15, 1761. It was a defensive and offensive alliance between France and Spain. Ferdinand IV., King of Naples, acceded to the alliance.

Famine, a scarcity of food over large areas, resulting in suffering or death by starvation and disease to multitudes. As late as the middle of the 17th century famines were a common affliction in Europe and even in the 18th century they still occurred.

In comparatively modern times there have been no periods of famine in the more civilized countries of America and Europe. Since the general introduction of modern means of communication, and refrigerating plants, the movement of all kinds of foods can be easily regulated. At the present time it would seem almost impossible for a famine to occur in America, Western or Central Europe, but in India and other parts of Asia the situation is different. In India, where there are eight months of dry weather and the crops depend on the rainfall of four months and subsequent irrigation, if there is any lack in the monsoon, famine is almost sure to follow. Under the rule of the English, too, the population has greatly increased, and, while the majority of people live from hand to mouth in ordinary times, the slightest failure in the rice crop causes the famine point to be immediately reached. The recent famine in India cost the government in 1900–1901 $28,235,000, of which amount $21,135,000 was expended in direct relief. Apart from this $13,700,000 was advanced to native states for famine relief and $4,735,000 for special agricultural advances. Readers of the Christian Herald contributed many thousands of dollars to the aid of the sufferers, and Louis Klopsch, the proprietor, visited India and gave personal attention to the work of relief. In 1870–1872 Persia lost 1,500,000 inhabitants, a quarter of the whole population. In the N. provinces of China, Shensi, Shansi, and Honan, with a population of 56,000,000, during the years following 1877 it was reckoned that between 4,000,000 and 6,000,000 people perished. In the famine of 1891–1892 in Russia it was estimated that in 18 provinces 27,000,000 of inhabitants were affected.

Fan, an instrument for winnowing rain by agitating the air, a small ane or sail, used to keep the large ils of a wind- ill always in e direction of e wind; an strument used ladies to agi- te the air, d cool the ce, in warm eather; hence, ything in the rm of a wo- an's fan when read; as, the n of a pea- ck's tail, etc. The fan was st brought in- European no- riety by Cath- ine de Medici, ho introduced into France, here it was so nstructed that could be used d folded in a anner similar the fan in e at the pres- t day. The inese have eatly excelled the art of fan aking, and in e species of cquered fans eir superiority fully admitted. The Chinese them- lves use a cheaper sort, made of mboo and paper, polished. Elec- ic fans are now used in this coun- y for keeping rooms, stores, etc., ol during hot weather; also used as means of ventilation.

Fanatic, a person affected by ex- ssive zeal and enthusiasm, espec- lly on religious subjects; one labor- g under wild and extravagant no- ons of religion; an enthusiast; a sionary.

Fandango, a lively Spanish dance triple time, derived from the Moors. is danced by two persons, male and male, and accompanied by the unds of the guitar. Also the accom- niment of this dance.

FRENCH FAN OF 17TH CENTURY.

SPANISH SHELL FAN, 18TH CENTURY.

Faneuil, Peter, an American merchant; born in New Rochelle, N. Y., in 1700; settled in Boston, Mass., where he became a successful merchant. In 1740 he offered to build a market house at his personal expense as a gift to the town, which he completed two years later. He died in Boston, March 3, 1743.

Faneuil Hall, a public hall in Boston, presented to the town by Peter Faneuil, in 1740, comprising a market-place on the first floor, and a town hall and other rooms above. In 1761 it was destroyed by fire. In 1763 it was rebuilt by the town; and, in 1775, during the British occupation of Boston, it was used for a theater. During the Revolutionary War this building was often used as a meeting place by the patriots. Owing to the many stirring debates that occurred here, the hall received the name of "the Cradle of American Liberty." The hall contains some fine paintings; and the first floor is still used as a market.

Fanfani, Pietro, an Italian philologist, humorist, and novelist; born in Pistoja, Italy, April 21, 1815; died in Florence, March 4, 1879.

Fanfare, in music, a short passage for trumpets. Certain flourishes in opera music are also called fanfares.

Fanning, David, an American freebooter; born in Wake co., N. C., about 1756; was a carpenter by trade, but led a vagabond life. Late in the Revolutionary War he joined the Tories for the purpose of revenge; gathered a small band of desperadoes like himself, laid waste whole settlements and committed fearful atrocities. For these services he received a lieutenant's commission from the British commander at Wilmington. So encouraged, he captured and hanged many leading Whigs. At one time he surprised a court in session and captured and carried off judges, lawyers, clients, officers and citizens. Three weeks later he captured Colonel Alston and 30 men in his own house and soon afterward seized Governor Burke and his suite and some of the principal inhabitants. The name of Fanning became a terror to the country, and he was outlawed. At the close of the war he fled to New Brunswick, where he became a member of the Legislature. He died in Digby, Nova Scotia, in 1825.

Fantail, in zoölogy, a genus of Australian birds. They derive their name from the fan-like shape of their tails. Also a variety of the domestic pigeon. In gas lighting a form of gas burner, in which the burning jet has an arched form. In carpentry, a kind of joint.

Fantasia, in music, a species of composition in which the author confines himself to no particular form or theme, but ranges as his fancy leads amid various airs and movements.

Fantis, a negro people on the Gold Coast of Africa. They were once the most numerous and powerful people on the Gold Coast, but since 1811 they have diminished in numbers, and now live under the protection of the British garrisons at Cape Coast Castle.

Fantoccini, an exhibition of puppets, or a dramatic representation on a small scale, performed by figures or dolls, an amusement of which the Italians are extremely fond, and which is frequently performed in a portable theater — like that of Punch and Judy.

Fan Tracery, in architecture a term applied to tracery used in vaulting, in which all the ribs that rise from the springing of the vault have the same curve and diverge equally in every direction, producing an effect not unlike that of the stiff portions of a fan. It was used in late Pointed work.

Faraday, Michael, an English scientist; born in Newington Butts, England, Sept. 22, 1791. He received little or no education and was apprenticed to the trade of a bookbinder. During his term of apprenticeship, a few scientific works fell into his hands which he read with avidity, and forthwith devoted himself to the study of, and experiments in, electricity. Having attended the lectures given in 1812 by Sir Humphry Davy, and taken notes thereon, he sent them to that great philosopher, and besought some scientific occupation. The reply was prompt and favorable. In 1813 Faraday was appointed chemical assistant, under Sir Humphry, at the Royal Institution. After a continental tour in company with his patron, Faraday, still pursuing his scientific investigations, discovered, in 1820, the chlorides of carbon, and, in the following year, the mutual rotation of a magnetic pole and an electric current. These were strong encouragements to proceed on the path of discovery, and led to the condensation of gases in 1823. In 1829 he labored hard, and, as he thought at the time, fruitlessly, on the production of optical glass; but though unsuccessful in his immediate object, his experiments produced the heavy glass which afterward proved of great assistance to him in his magnetical investigations. In 1831 the series of "Experimental Researches in Electricity," published in the "Philosophical Transactions," began with the development of the induction of electric currents, and the volution of electricity from magnetsm. Three years later Faraday esablished the principle of definite elecrolytic action, and, in 1846 received t the same time the Royal and the Rumford medals for his discoveries of iamagnetism, and of the influence of nagnetism upon light respectively. n 1847 he discovered the magnetic haracter of oxygen, and, also, the nagnetic relations of flame and gases. His papers, including other contribuions to the store of modern science, re too numerous to mention in deail. In 1833 Faraday was appointed Professor of Chemistry in the Royal nstitution, London, which chair he ontinued to hold until his death. In 835 he received from government a ension of $1,500 per annum in recgnition of his eminent scientific nerits. In 1836 he was appointed a nember of the senate of London Uniersity. From 1829 to 1842 he was hemical lecturer at the Royal Acadmy. In 1823 Faraday was elected orresponding member of the French cademy, in 1825 he was chosen a Fellow of the Royal Society, and in 832 made a D. C. L. of Oxford Uniersity. He was, besides, a knight of everal of the European orders, and member of the chief learned and cientific societies in Europe and the United States. In private life his haracter was irreproachable, and haracterized by great humanity and nodesty. He died in Hampton Court, ug. 25, 1867.

Farafeh, an oasis of the Libyan Desert in Africa, containing several uins of Greek and Roman origin. The nhabitants fabricate some coarse woolen cloths and earthenware.

Farandola, a dance popular among he peasants of the S. of France and he neighboring part of Italy.

Farce, originally a petty show exibited in the street; now a recognized erformance at the theaters. The diference between comedy and farce is hat the former keeps to nature and robability, and therefore is confined o certain laws allowed by critics; whereas farce sets aside all laws upon ccasion. Its end is to make merry, nd it sticks at nothing to further it.

Farcy, a disease in horses, closely llied to glanders.

Fardel Bound, a term applied to sheep and cattle when suffering from a disease caused by the retention of food in the third stomach, or maniplies. It frequently arises from the eating of over-ripe clover, vetches, or rye grass; the food being tough and indigestible, the stomach is unable to moisten and concoct it with sufficient speed, and fresh quantities being taken in, the stomach becomes overgorged and at last paralyzed and affected with chronic inflammation.

Fargo, William George, an American capitalist; born in Pompey, N. Y., May 20, 1818; became Buffalo agent of the Pomeroy Express Company in 1843; established the first express company W. of Buffalo, in 1844; and in 1868 became president of the great corporation controlling the whole West, the Wells, Fargo Express Company. He died in Buffalo, N. Y., Aug. 3, 1881.

Fargo College, a co-educational institution in Fargo, N. D.; founded in 1888 under the auspices of the Congregational Church.

Faria, Manoel Severim de, a Portuguese author; born in Lisbon, Portugal, in 1583. He devoted many years to the study of his country's literature, giving his researches and thought a lasting form. He died in Evora, Sept. 25, 1655.

Faria y Sousa, Manoel de, a Portuguese poet and historical writer; born near Pombeiro, Portugal, March 18, 1590. He died in Madrid, Spain, June 3, 1649.

Faribault, a city and county-seat of Rice co., Minn. Faribault is noted on account of a memorable controversy which arose in the Roman Catholic Church in 1891 over the action of a priest in transferring the parochial school to the management of the public school board. The scheme and conditions which became known as the Faribault Plan were approved by Archbishop Ireland. On April 30, 1892, the plan was sanctioned in Rome by the Congregation of the Propaganda.

Farina, Salvatore, an Italian novelist; born in Sorso, Sardinia, Jan. 10, 1846. His tales were successful from the first. The sympathy with lowly life and the rich humor of his stories have gained him the title of "The Italian Dickens." He is the best known abroad of all Italian novelists.

Farinelli, real name Carlo Broschi, an Italian soprano singer; born in Naples, Italy, Jan. 24, 1705. Many extraordinary stories are related of Farinelli's vocal skill, and his command over the feelings and sympathies of his audience appears to have been unrivalled. He died in Bologna, Italy, Sept. 15, 1782.

Farini, Carlo Luigi, an Italian historian; born in Russi, Oct. 22, 1812. He studied medicine at Bologna, but early entered upon a political career, becoming minister of Public Instruction in 1850, of Commerce in 1861, and president of the Council in 1862 during Cavour's administration. He died Aug. 1, 1866.

Farjeon, Benjamin Leopold, an English novelist; born in London, England, in 1833. He went to Australia in early life, and after some experience in the gold diggings of Victoria returned to London in 1869 and devoted himself to literature.

Farley, James Lewis, an Irish journalist; born in Dublin, Ireland. Sept. 9, 1823. Established in Turkey as a bank official, he became correspondent of two or three great London dailies and speedily made himself an authority on Turkish questions. He died in London, England, Nov. 12, 1885.

Farley, John Murphy, an American clergyman; born in Newton Hamilton, Ireland, April 20, 1842. He was made secretary to Archbishop McCloskey in 1872–1884; became a domestic prelate of Pope Leo XIII. in 1892; was appointed auxiliary bishop of New York and consecrated titular bishop of Zeugma in 1895. Upon the death of Archbishop Corrigan in 1902 Bishop Farley was appointed his successor, and received the pallium, and was solemnly installed as archbishop of New York in 1903.

Farlow, William Gilson, an American botanist; born in Boston, Mass., Dec. 17, 1844. After graduating at Harvard, he spent several years in Europe pursuing his favorite study and became Professor of Cryptogamic Botany at Harvard in 1879. Upon the subject of cryptogamic botany, he is considered an authority.

Farm, a tract or piece of land cultivated by a single person, whether owner or tenant; also a district farmed out for the collection of revenue; or the right or permission to sell certain articles subject to duties.

Farman, Elbert Eli, an American diplomatist; born in New Haven, N. Y., April 23, 1831; was graduated at Amherst College in 1885. He studied international law in Berlin and Heidelberg, Germany, in 1864–1867; was United States diplomatic agent and consul-general at Cairo, Egypt, in 1876–1881; accompanied General Grant in the voyage up the Nile in 1878; was a member of the International Commission to revise the judicial codes of Egypt in 1880–1881; judge of the mixed tribunal of Egypt in 1881–1884; and United States member of the International Commission which examined the claims of the inhabitants of Alexandria for losses arising from the bombardment in 1882, 1883 and 1884. He secured the obelisk "Cleopatra's Needle" as a gift of the khedive to New York city, in 1879: made large collections of ancient coins and Egyptian antiquities which he gave to the Metropolitan Museum of Art in New York city; and subsequently engaged in literary work.

Farmer, one who farms or contracts to collect taxes, imposts, duties, etc., for a certain payment per cent.; also one who forms or cultivates ground; an agriculturist; a husbandman.

Farmer, Henry Tudor, an American poet; born in England in 1782. While very young he emigrated to Charleston, S. C., where he continued to reside till his death. He died in Charleston, S. C., January, 1828.

Farmer, Mrs. Lydia Hoyt, an American miscellaneous writer; born in Cleveland, O., in 1842.

Farmer, Moses Gerrish, an American electrician; born in Boscawen, N. H., Feb. 9, 1820; was graduated at Dartmouth College in 1844; taught in Elliot, Me., and in Dover, N. H., for two years. He invented several electro-motors, one of which he used in his workshop to ive a lathe, and another on a minia-ure railway. On this railway he ansported by electricity the first pas-ngers ever so carried in the United tates. In 1847 he moved to Fram-gham, Mass., and invented the tele-aph fire alarm. In 1865 he in-ented a thermo-electro battery and so built the first dynamo, and in 380 patented an automatic electric ght system. Besides these inventions e brought to light and perfected many hers of general utility. He died in hicago, Ill., May 25, 1893.

Farmer-General, in France, one a company which, under the mon-rchy, contracted with the govern-ent for the privilege of collecting rtain taxes, paying over to the gov-nment a certain fixed sum each year, d taking the proceeds of the taxes their equivalent. The company as abolished at the Revolution.

Farmer's Alliance, a general term r an American association of agri-lturists which was founded in 1873, iginally in Texas, where it was or-nized for the purpose of coöperation ainst cattle thieves. In 1887 its embers had increased to over 100,-0, its scope was greatly extended d it consolidated with the Farmers' nion of Louisiana, becoming incor-rated under the laws of the Dis-ict of Columbia, as the National armers' Alliance and Coöperative nion. In 1880 the National Agri-ltural Wheel was organized in Ar-nsas, and branches were formed in her States. These two organiza-ons were consolidated at St. Louis, o., Oct. 1, 1889, under the name of e National Farmers' Alliance and dustrial Union, with a membership en estimated at from 1,600,000 to 500,000. This society is in active eration in all the Southern and estern States (except Ohio and Wy-ning), and in New York, New Jer-y, and Pennsylvania. Another or-nization, called the National Farm-s' Alliance, was formed in Chicago 1880, and is now the general rep-sentative of State alliances formed Illinois, Iowa, Indiana, Minnesota, issouri, Montana, Nebraska, New ork, North and South Dakota, Ohio, ennsylvania, Washington, and Wis-nsin. While these associations claim be non-partisan and non-political, their conventions have adopted platforms urging political reforms, and they have undoubted weight in legislation affecting the interests of the farmer. The People's Party was an outgrowth of the Farmers' Alliance.

Farnese, the patronymic of an illustrious and princely Italian house, which arose about the middle of the 13th century.

Farnese, Alessandro, was born 1546. He early entered upon the profession of arms, and distinguished himself at the battle of Lepanto (1571) under his uncle, the famous Don John of Austria. He was subsequently made commander-in-chief of the army sent to the assistance of the French Catholics, and compelled Henry IV. to raise the siege of Paris; but, being ill-supported by the League, he was eventually obliged to succumb to his great adversary and died soon after in Arras, in 1592.

Farnham, Eliza Woodson, an American prose-writer; born in Rensselaerville, N. Y., Nov. 17, 1815. She traveled extensively; returned to New York in 1841; visited the State Prison and lectured to the women convicts; and was matron of the Sing Sing State Prison for four years. She was a philanthropist. She died in New York city, Dec. 15, 1864.

Faro, a game of cards, in which the player plays against the bank, which is kept by the proprietor of the table. It is a common form of gambling, and is prohibited by law as such.

Faroe Islands, a group of 22 islands belonging to Denmark, in the Northern Ocean, about 185 miles N. W. of the Shetland Isles, and 320 S. E. of Iceland; area 514 square miles; pop. (1901) 15,230. The principal island, Stromoe, in the center, is 27 miles long by about 7 broad; the chief of the others are Osteroe, Vaagoe, Bordoe, Sandoe, and Suderoe. Only 17 of the islands are inhabited. Each of these islands is a lofty mountain rising out of the waves, and divided from the others by deep and rapid currents. Soil thin, but tolerably fertile; barley is almost the only cereal grown. Products, hay in large quantities, salted mutton, tallow, feathers, eiderdown, etc. Manufactures, coarse woolen stuffs, and stockings. Vast quantities of sea-fowl haunt the rocks, the taking of which for the sake of their feathers affords a perilous employment to the inhabitants. Capital, Thorshavn, at the S. E. end of Stromoe. These islands are under the jurisdiction of a Danish governor, and have belonged to Denmark since the union of that kingdom with Norway, in the 14th century.

Farquhar, George, a British comedy writer; born in Londonderry, Ireland, in 1678. He died in 1707.

Farquhar, Norman von Heldrich, an American naval officer; born in Pottsville, Pa., April 11, 1840; was graduated at the United States Naval Academy in 1859; was acting master in the African squadron engaged in the suppression of the slave trade in 1859–1861; promoted lieutenant in 1861, and, during the Civil War served in the North Atlantic blockading squadron. He commanded the "Trenton," when she was wrecked at Apia, Samoa, in 1889; became chief of the Bureau of Yards and Docks in 1890; and commandant of the Norfolk Navy Yard. He was promoted commodore in 1897, and rear-admiral in 1899; in the latter year was appointed commander-in-chief of the North Atlantic Station; and on May 2, 1901, was appointed chairman of the Lighthouse Board.

Farragut, David Glascoe, an American naval officer; born in Campbell's Station, Tenn.; July 5, 1801. He was appointed, without previous training, a midshipman as early as 1810. Under Commodore Porter he was engaged in the "Essex" in her cruise against the British in 1812–1814, and, after her capture, he served on board the line-of-battle ship "Independence." Passing his examination with credit, he was ordered, as lieutenant, to the West India station, and was appointed, in 1847, to the command of the "Saratoga" (20 guns), in which ship he took part in the naval operations during the Mexican War. When the Civil War broke out Farragut received the command of the Gulf squadron which was to coöperate with General Butler in the reduction of New Orleans, and engaged and passed the two strong forts of the Mississippi in April, 1862, which brought about the surrender of that city on the 28th of the same month. Natchez was taken in May, and Farragut's fleet ascended as far as Vicksburg, which place he bombarded till the fall of water compelled him to return to New Orleans. In 1862 he was the first officer to receive the rank of admiral in the United States navy; and in March, 1863, he passed the batteries of Port Hudson, and was in a few days again before Vicksburg, coöperating with General Grant in the reduction of that important stronghold. Having been ordered to attempt the capture of Mobile, he took the forts commanding the mouth of that harbor in August, 1864, with the loss, however, of one of his ironclads, the "Tecumseh," and its crew, by the explosion of a torpedo, and met with a repulse in an attack on Wilmington, Dec. 24–25. The place was, however, taken Jan. 15, 1865, and Mobile surrendered April 12, following. The naval successes gained by the Nationals were in a great measure due to the energy and daring of this gallant officer. Admiral Farragut served in the United States navy for 60 years, during about 12 years of which only was he unemployed on sea. In 1865 Farragut was appointed to the command of an American squadron dispatched on a cruise in European waters, from which he returned in 1868, after receiving the highest courtesies in the various states which his fleet visited. He died in Portsmouth, N. H., Aug. 14, 1870.

Farrar, Eliza Ware, an American story-writer; born in Flanders, Belgium, in 1791. She died in Springfield, Mass., April 22, 1870.

Farrar, Frederick William, an English clergyman, dean of Canterbury; born in Bombay, India, Aug. 7, 1831. He was educated at King William's College, Isle of Man, King's College, London, and Cambridge University; was assistant master at Marlborough College; 16 years master at Harrow; canon and archdeacon of Westminster; and chaplain to the queen. He wrote these novels: "Eric, etc." (1858); "Julian Home" (1859); "St. Winifred's, etc." (1863). Of his religious and theological writings the most notable are: "The Witness of History to Christ" (1871); "The Life of Christ" (2 vols. 1874), a work written for the people and which has had a large circulation; "Life and Works of St. Paul" (2 vols. 1879); "The Early Days of Christianity" (2 vols. 1882); "Eternal Hope," a work which has been severely criticized on account of its lax doctrine regarding the question of everlasting punishment, etc. He died in 1903.

Farrington, Oliver Cummings, an American geologist; born in Brewer, Me., Oct. 9, 1864; was graduated at the University of Maine in 1881; became lecturer on mineralogy in the University of Chicago in 1894, and Curator of Geology at the Field Columbian Museum in the same year.

Farthingale, or **Fardingale,** a name given to the hoop of whalebone used formerly by ladies to spread out the petticoat to a wide circumference. It was introduced into England in the reign of Queen Elizabeth, and continued to be used on state occasions down to the commencement of the 19th century. The hoop or crinoline was a modernized form of the farthingale.

Fasces, the most ancient insignia of the Roman magistrates, consisting of bundles of elm or birch rods, in the center of which was an ax.

Fascination, the act or power of fascinating, or of exercising supernatural and irresistible influence on a person or animal; a bewitching, charming, or enchantment. Such power or influence was formerly ascribed to magicians, and to certain animals, as the basilisk, and the belief in the power or influence of the "evil eye" is a remnant of this once nearly universal superstition.

Fascine, in fortification, a cylindrical bundle of fagots or brushwood used in revetments of earthworks. Fascines dipped in pitch or other combustible matter are sometimes used in order to set fire to the enemy's lodgments or other works. In civil engineering fascines are used in making sea and river walls to protect shores subject to washing; or to collect sand, silt, and mud to raise the bottom and gradually form an island, either as a breakwater against inroads, or for purposes of cultivation, as in Holland.

Fast, total or partial abstinence from or deprivation of food; an omission to take food. Also a time set apart to express national grief for some calamity, or to deprecate an impending evil.

The old Egyptians, the Assyrians (Jonah iii: 5), the Greeks, Romans, and other ancient nations, had most of them stated or occasional fasts, as have the modern Mohammedans, Hindus, etc.

The Day of Atonement was the only fasting day enjoined by the law of Moses, but the Mishna speaks of four others, respectively commemorating the storming of Jerusalem by Nebuchadnezzar, the burning of the Temple by Titus, the sack of Jerusalem by Nebuchadnezzar, and the receiving by Ezekiel and the other captives of the news of the destruction of Jerusalem. There were also fasts proclaimed by royal or other authority on special occasions (I Kings xxi: 9–12; II Chron. xx: 3; Ezra viii: 2). For the spiritual and unspiritual way of keeping a fast, see Isaiah lviii: 3.

No stated fasts are enjoined in the New Testament; they arose subsequently, the Lent fast taking the lead. In the 3d century the Latins fasted on the seventh day. In A. D. 813 the Council of Mentz in its 34th canon ordered a fast the first week in March, the second week in June, the third week in September, and the last full week preceding Christmas eve. Toward the end of the 10th century, the custom became prevalent of fasting on Saturday in honor of the Virgin Mary. In the Episcopalian and Roman Catholic Churches the principal fasts of the year are Lent, the Ember days, All-Saints, the Immaculate Conception, Rogation days, and the eves or vigils before certain festivals; as before Christmas day. Some of these fasts are common to both Churches.

Several times in the course of political events have different Christian governments proclaimed days of fasting and prayer, supplication being directed to the great Guide and Director of affairs that He would avert the threatened danger with which the State was confronted. As a notable antitype of this custom may be mentioned the American National Thanksgiving.

Fastenrath, Johannes, a German poet and story-teller; born in Remscheid, May 3, 1839. He translated Juan Diana's comedy "Receipt against Mothers-in-Law"; wrote many works on the history of Spanish literature. A volume of war songs dedicated "To the German Heroes of 1870" is also his.

Fasti. Numa Pompilius (715 B. C. to 673 B. C.), instituted the custom of marking monthly records of the feasts, games, etc., observed at Rome, on tables of stone. These, preserved by the priests, became the calendar by which the course of public business and of justice was regulated. C. Flavius copied these fasti, 306 B. C. and exhibited them in the Forum; and they subsequently became a kind of abridged annals, recording the names of public magistrates and the most important political events.

Fasting, in ordinary language, the act or state of abstaining partially or entirely from food. In medicine, loss of appetite without any other apparent affection of the stomach; so that the system can sustain almost total abstinence for a long time without fainting.

Fat, in anatomy, an animal substance of a more or less oily character deposited in vesicles in adipose tissue. It forms a considerable layer under the skin, is collected in large quantities around certain organs, as, for instance, the kidneys, fills up furrows on the surface of the heart, surrounds joints, and exists in large quantity in the marrow of bones. It is an excellent packing material in the body, being light, soft, and elastic. It gives to the surface of the human frame its smooth, rounded contour. Being a bad conductor of heat, it enables a person to retain the warmth which he has generated; but its chief use is for the purpose of nutrition.

Fatalism, the doctrine that all things are ordered for men by the arbitrary decrees of God or the fixed laws of nature. In theology it has given birth to theories of predestination, and in moral science to such systems as those of Spinoza and Hegel, and more recently to the philosophy of Herbert Spencer. It is carried out to its most pitilessly logical extreme among the Mohammedans, where everything that can happen is "kismet," i. e., fated, or decreed by fate.

Fata Morgana, a remarkable aërial phenomenon observed from the harbor of Messina and adjacent places, and supposed by the Sicilians to be the work of the fairy Morgana. Objects are reflected sometimes on the surface of the sea, and sometimes on a kind of aërial screen to 30 feet above it.

Fates. In heathen mythology the fates were three sisters supposed to spin out the destiny of human beings.

Fathers, The, a name applied to the early writers of the Christian Church — those writers who have given us accounts of the traditions, practices, etc., that prevailed in the early Church.

Fatimides, or **Fatimites** (named from Fatima, the daughter of Mohammed and wife of Ali, from whom the founder of the dynasty described in the definition professed to have sprung), a race of Mohammedan kings, whose founder, Abu Mohammed Obeidallah, was born in A. D. 882, and began to reign in 910, making Mahadi, the ancient Aphrodisium, about 100 miles S. of Tunis, his capital. The place was called from the name Mahadi, or Director of the Faithful, which he had assumed. The dynasty there founded continued to reign till 1171, and produced in all 14 kings.

Faucit, Helen (Lady Martin), an English actress; born in London, England, Oct. 11, 1819. As an interpreter of Shakespeare's heroines, Juliet, Rosalind, Portia, Beatrice, Imogen, Cordelia, and Lady Macbeth, she stood first among the actresses of her time. She died in Wales, Oct. 31, 1898.

Fault, in mining and geology, the sudden interruption of the continuity of strata till then on the same plane, this being accompanied by a crack or fissure varying in width from a mere line to several feet generally filled with broken stones, clay, or similar material. In hunting, a check, the losing of the scent. In tennis, an improper service. At fault, at a loss; in a difficulty; puzzled; embarrassed.

Faun, in Roman mythology, a Latin rural deity, who presided over woods and wilds, and whose attributes bear a strong analogy to those of the Grecian Pan, with whom he is sometimes identified. He was an object of peculiar adoration of the shepherd and husbandman, and at a later period he is said to have peopled the earth with a host of imaginary beings identical with himself. Also one of a kind of demi-gods or rural deities, bearing a strong resemblance in appearance and character to the satyrs, with whom they are generally identified. They are represented as men with the tail and hind legs of a goat, pointed ears, and projecting horns.

Faunce, John, an American naval officer; born in Plymouth, Mass., March 25, 1807. In 1858 he was made commander of the revenue steamer "Harriet Lane," which, under his command in 1861, was one of the small fleet that was hastened to the relief of Fort Sumter, and was fired on by the Confederates at Charleston. After the war he was detailed to service in the live-saving department, in which capacity he did much toward its thorough organization and perfection. He died in Jersey City, N. J., June 5, 1891.

Faunce, William Henry Perry, an American educator; born in Worcester, Mass., Jan. 15, 1859; was graduated at Brown University in 1880, and at the Newton Theological Seminary in 1884. He was made president of Brown University in June, 1899.

Faure, Francois Felix, president of the French Republic; born in Paris, Jan. 30, 1841; was for a time a tanner in Touraine, but became a wealthy shipowner in Havre, and an authority on all questions concerning shipping, commerce, and the colonies. During the Franco-Prussian war he commanded a body of volunteers and gained the ribbon of the Legion of Honor. He entered the Assembly in 1881, served as colonial and commercial minister in the cabinets of Gambetta, Jules Favre, and Tirard, and as minister of marine in that of Dupuy. A moderate republican, he was elected president of the republic on the resignation of Casimir-Perier in 1895. He died in Paris, France, Feb. 16, 1899.

Fauriel, Claude, a French historian; born in St. Etienne, France, Oct. 21, 1772. He died in Paris, July 15, 1844.

Faust, or **Fust, Johann,** one of the three artists to whom the invention of printing has been ascribed, was the son of a goldsmith at Mentz, Germany. The other two were Gutenberg and Schaffer; to the former of whom the invention of printing with wooden blocks has been attributed; and to the latter, who married the daughter of Faust, is allowed the honor of having invented punches and matrices, by means of which this grand art was carried to perfection. It has been pretended that, when Faust went to Paris to sell a second edition of his Bible of 1462, he was arrested on the supposition that he effected the printing of his books by magic; but this story appears to be a mere fiction. It is believed that he died of the plague in 1466.

Faust, or **Faustus, Dr. Johann,** a famous magician, about whose name and existence so many obscure legends have grown, lived in the beginning of the 16th century, and was probably born at Knittlingen, in Suabia. After receiving his education at Wittenberg, he went to Ingolstadt, where he studied medicine, astrology, and magic, and occupied himself in alchemical experiments. Faust was a man of great scientific acquirements; and, according to legendary tradition, he made use of his powers to inspire his countrymen with a firm belief that he had dealings with the devil. The story of Dr. Faustus furnished the subject of a remarkable dramatic poem by Christopher Marlowe, and has been immortalized by the genius of Goethe. Gounod's well-known opera is also founded on this character.

Faustina, mother and daughter, wives of two of the noblest among the Roman emperors. The elder, Annia Galeria, usually spoken of as Faustina Senior, was the wife of Antoninus Pius, and died 141 A. D.; the younger, known as Faustina Junior, was married to his successor, Marcus Aurelius Antonius, and died at a village near Mount Taurus in 175 A. D. Both, but particularly the younger, were notorious for the profligacy of their lives.

Fava, Onorato, an Italian author; born in Collobiano, Piedmont, July 7, 1859. He is versatile and sprightly in many capitally written and original things.

Favre, Gabriel Claude Jules, a French advocate, author and orator; born in Lyons, France, March 21, 1809. Favre became the strenuous opponent of Louis Napoleon after the latter's election to the presidency. In 1858 he became a member of the legislative body; after which time he distinguished himself by his speeches in favor of complete liberty of the press, against the law of "Deportation," the war with Austria of 1859, and, in 1864, by an attack on the policy of the imperial government in the Mexican War. He became vice-president of the provisional government of national defense, and minister of foreign affairs in September, 1870; signed the definitive treaty of peace with Prussia, May 10, 1871, and resigned his post two months later. He was elected to the French Academy in 1867. He died in Versailles, France, Jan. 19, 1880.

Favus, in ordinary language, a slab or piece of marble cut into a hexagonal shape, so as to produce a honey-comb pattern. In pathology, a disease of the skin, characterized by the breaking out of pustules, which are succeeded by cellular crusts bearing some fanciful resemblance to an irregular honey-comb. Their seat is commonly upon the scalp. It is more common in infants than adults.

Fawcett, Edgar, an American author; born in New York city, May 26, 1847; was graduated at Columbia College in 1867; traveled in Europe and Italy; latterly resided in London.

Fawcett, Henry, an English political economist; born in Salisbury, England, Aug. 26, 1833. An accident which deprived him of sight early in life did not prevent his attainment of distinction as postmaster-general under Gladstone, and as a writer of force on economic subjects. He died in Cambridge, Nov. 6, 1884.

Fawcett, Millicent Garrett, an English writer, widow of Henry; born in Aldeburgh, Suffolk, England, June 11, 1847. She has been a leader in the movement for university education for women.

Fawkes, Faux, or **Vaux, Guy,** an English conspirator; born in York, England, in 1570. He enlisted in the Spanish army in the Netherlands, where he was found by Winter, one of the Roman Catholic conspirators, and with him returned to England in 1604, after agreeing to assist in the Gunpowder Plot. After collecting the necessary combustibles, Fawkes worked his way into the coal cellar under the House of Lords, and after storing it with gunpowder, etc., was appointed to the dangerous duty of firing the mine. The government having had timely information of the detestable plot, the House of Lords and its cellar was searched, and Fawkes found secreted amid some casks of gunpowder, Nov. 5, 1605. He was at once arrested, soon after tried, and Jan. 31, 1606, suffered death at Westminster with several of the other conspirators. The detection of this plot is celebrated to this day in England by bonfires.

Fay, Andreas, a Hungarian author; born in Kohany, Zemplin, Hungary, May 30, 1786. Till the appearance of Kossuth on the scene (1840) he was the foremost leader at Pest of the Opposition party; thereafter he took no considerable part in politics, but promoted many important national enterprises. He died in Pest, July 26, 1864.

Fay, Theodore Sedgwick or **Sedgewick,** an American writer; born in New York city, Feb. 10, 1807. He was eminent in periodical journalism for years. He served with ability in the United States diplomatic service, and after 1861 lived in Berlin, where he died Nov. 17, 1898.

Faye, Herve Auguste-Etienne-Albans, a French astronomer; born in St. Benoit du Sault, France, Oct. 5, 1814. He discovered the comet which bears his name in 1843; became Inspector-General of Higher Education in 1877; and was made Chevalier of the Legion of Honor in 1843; and promoted to Grand Officer of the Legion in 1889. He wrote a number of books on astronomical subjects. He died July 4, 1902.

Fayetteville, a city and county-seat of Cumberland co., N. C. On April 22, 1861, the Confederates seized the United States arsenal at this point. General Sherman occupied the town March 11–14, 1865, and destroyed the arsenal. Pop. (1900) 4,670.

Fayum, Fayoum, or **Faioum,** a famous valley and province of Central Egypt. It is the most fertile of the Egyptian provinces and produces dhurra, rye, barley, flax, cotton, sugar, grapes, olives, figs, etc. Near the capital (Medinet-el-Fayum) large quantities of roses are cultivated, and are converted into rose water which is highly esteemed. Captain Petrie and other explorers have made important excavations, of late years, on the sites of the old cities of Fayum.

Fealty, loyalty; faithful adherence; true service or duty to a superior lord, especially in feudal times.

Feast, a banquet, a festival, a holiday, or a solemnity. Almost every religion has had its solemn feast days. The ancient Greeks and Romans had them, as well as the Jews and modern Christians. God appointed several festivals among the ancient Jews, the first and most ancient of which was the Sabbath, or seventh day of the week, commemorative of the creation. The Passover was instituted in memory of their deliverance out of Egypt, and of the favor of God in sparing their first-born when those of the Egyptians were slain. The feast of Pentecost was celebrated on the 50th day after the Passover, in memory of the law being given to Moses on Mount Sinai. The feast of Tents, or Tabernacles, was instituted in memory of their fathers having dwelt in tents for 40 years in the wilderness, and all Israel was obliged to attend the temple and dwell eight days under tents. These were their principal feasts; but they had numerous others; as the feast of Trumpets, the feast of Expiation or Atonement, the feast of the Dedication of the Temple, the Moons, etc. In the Christian Church, no festival appears clearly to have been instituted by Jesus Christ or His apostles, yet Christians have always celebrated the memory of His resurrection and numerous others were introduced at an early period. At first, they were only appointed to commemorate the more prominent events in the life and death of our Redeemer, and the labors and virtues of the apostles and evangelists; but martyrs came soon after to be introduced, and by the 4th century their number had increased to a very extravagant extent. And not only so, but instead of being spent in devotional exercises they were employed in the indulgences of sinful passions and in criminal pursuits; indeed, many of the festivals were instituted on a pagan model, and perverted to similar purposes.

Feather, a plume or quill, one of dermal growth, multitudes of which constitute the covering of a bird. A feather is homologous with a hair from the skin of a mammal, and some of the inferior birds have imperfect feathers suggestive of hairs only.

Feathering, Paddle-Wheel, a wheel whose floats have a motion on an axis, so as to descend nearly vertically into the water and ascend the same way, avoiding beating on the water in the descent and lifting water in the ascent.

Feathering Propeller, an invention of an Englishman, Maudslay, in which the vanes of the propeller screw are adjustable, so as even to be turned into the plane of the propeller shaft and offer no resistance when the vessel is under sail and the propeller not used.

Featherstonhaugh, George William, an American traveler; born in 1780; made geological surveys in the West for the United States War Department in 1834–1835; was appointed by Great Britain a commissioner to determine the Northwestern boundary between Canada and the United States, under the Ashburton-Webster treaty. He was the author of numerous technical reports and papers. He died in Havre, France, Sept. 28, 1866.

Febiger, John Carson, an American naval officer; born in Pittsburg, Pa., Feb. 14, 1821. On May 5, 1864, while in command of the "Mattabeset," of the North Atlantic fleet, he participated with the little squadron under Capt. Melancthon Smith in defeating the Confederate ram "Albemarle," in Albemarle Sound, N. C., and was commended for his bravery and skill in that engagement. He was promoted rear-admiral Feb. 4, and retired July 1, 1882. He died in Londonderry, Md., Oct. 9, 1898.

Febrifuge, a medicine tending to cure or alleviate fever. The term should properly be confined to such substances as exercise a direct and specific action on the chain of morbid actions which constitute the disease.

February, the name of the second month of the year. It contains in ordinary years, 28 days, and in bissextilis, or leap year, 29. By the calendar of Julius Cæsar, February had 29 days except in bissextile, or leap year, when it had 30. But Augustus took a day from it, and added it to his own month, August, that it might not have a less number of days than July, dedicated to Julius Cæsar. Previously August had been called Sextilis, and consisted of 30 days only.

Fechner, Gustav Theodor, a German author; born in Gross Sarchen, Prussia, April 19, 1801. His works on purely scientific topics have made him eminent; while under the name of "Doctor Mises" he has written various popular humorous tales. He died in Leipsic, Nov. 18, 1887.

Fechter, Charles Albert, a French actor; born in London, England, Oct. 23, 1824. In 1870 he came to the United States and played to crowded houses, especially in "The Count of Monte Cristo." He died in Quakertown, Pa., Aug. 4, 1879.

Federals, the name given to those who during the Civil War in the United States fought to maintain the Union of the Federal States, in opposition to the Confederates. The name was never favored by loyal Unionists, and was much used by unfriendly foreigners, who sought to treat the contending forces as of equal national standing.

Federal States, states united by a federation or treaty which, binding them sufficiently for mutual defense and the settlement of questions bearing on the welfare of the whole, yet leaves each State free within certain limits to govern itself. United States and Switzerland are examples of this political constitution.

Federalist, the name of an early political party in the United States. After the acknowledgment of the independence of the 13 colonies by the mother country, the first task that confronted the successful revolutionists was the erection of a government and the formulation of a constitution. When the deliberative body on whom devolved this duty met, it was discovered that there were various sentiments entertained by its members, these differences of opinion aligning themselves on opposite sides of the great question of organic union. One faction favored the erection of a nation with more or less absence of independence of its constituent members, while the other urged a federation of sovereign states, each one of which should retain its autonomy, and not be amenable to the general government any further than it by actual cession gave that government authority. Those favoring a strong or national organic union were called Federalists, and numbered in their ranks such men as George Washington, Alexander Hamilton, and others, while those favoring the sovereignty of the States were called Republicans, among them being Thomas Jefferson, James Madison, and others equally distinguished. Later in the history of the country the Federalists became known as Whigs, while the Republicans were called Democrats.

Fee, a reward, compensation, or return for services rendered. It is especially applied to the money paid to professional men for their services; as, a lawyer's fees, marriage fees, etc.

In feudal law, fee applied to all lands and tenements which were held by any acknowledgment of superiority to a higher lord; land held by the benefit of another, and in name whereof the grantee owed services or paid rent, or both, to a superior lord.

In American and English law, a freehold estate of inheritance, descendable to heirs general, and liable to alienation at the pleasure of the proprietor.

Fee, John G., an American abolitionist; born in Bracken co., Ky., Sept. 9, 1816. As a result of his preaching he was mobbed several times, but in 1853 he went to Berea, Ky., where he succeeded in founding a church and establishing Berea College, an institution open alike to blacks and whites. He died in Berea, Ky., Jan. 12, 1901.

Feeble-minded, The, a defective class of children for whom educational advantages are provided by special State institutions.

Feehan, Patrick Augustine, an American clergyman; born in Tipperary, Ireland, Aug. 29, 1829; was educated at Castlenock College and at Maynooth College, and came to the United States in 1852. In 1865, he became Bishop of Nashville; and was installed as first Archbishop of Chicago in 1880. He died of apoplexy in Chicago, Ill., July 12, 1902.

Feed Pump, a force-pump for supplying to the boiler a quantity of water equal to that removed in the form of steam.

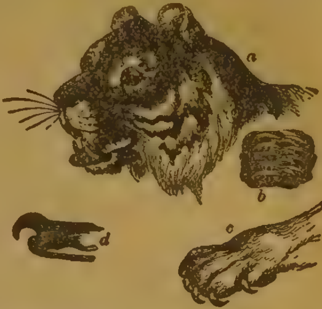
Feeling, the sensation or impression produced in the mind when a material body is touched by any part of the body; a physical sensation of any kind due to any one of the senses; as, a feeling of warmth, or of cold; also a mental sensation or emotion; mental state; sensitiveness.

Feet-washing, a religious ceremony observed in the Roman Catholic Church, on which occasion, just before Easter, the Pope washes the feet of attendant ecclesiastics, in imitation of the action of Jesus Christ in washing the disciples' feet. A similar ceremony is performed by the emperor of Austria, poor men being selected as the objects.

Felder, Franz Michael, an Austrian story-writer; born in Schoppernau, Austria, May 13, 1839. Though condemned to the labor of the field and "by poverty oppressed," his books, markedly original in style and view, gave him an acknowledged literary standing. He died in Bregenz, Austria, April 26, 1869.

Feldmann, Leopold, a German dramatist; born in Munich, Bavaria, May 22, 1802. After five years in travel, chiefly in Greece, as correspondent of the "Allegemeine Zeitung," in 1850, he settled in Vienna for life. His comedies were very popular in their day. He died March 26, 1882.

Felidæ, or Felinæ, the cat tribe, a family of carnivorous quadrupeds, including the domestic cat, lions, tigers, panthers, leopards, and lynxes. In these animals the destructive organs reach the highest perfection. The head is short and almost rounded in its form. The principal instruments of their destructive energy are the teeth and claws, their strong, sharp retractile talons, with which all the four feet are armed, and the corresponding destructive nature of the dentary organs constituting the essential characteristics of the family. The felidæ are found in all parts of the world except Australia.



CHARACTERISTIC FEATURES OF THE FELIDAE.

a, tiger's head; b, portion of tongue; c, right fore-paw, showing claws; d, claw, showing tendons.

Felix, Claudius, or **Antonius,** a Roman procurator of Judea, before whom Paul so "reasoned of righteousness, temperance, and judgment to come," that he trembled, saying, "Go thy way for this time; when I have a convenient season I will call for thee." Felix rose from slavery, having been manumitted by Claudius Cæsar. His rule in Judea, notwithstanding its severity or rather in consequence of it, was marked by constant disorders and disaffection. Tacitus paints Felix in the darkest colors — a character confirmed by what is related of him in the New Testament, that he had expected a bribe from Paul, and that, disappointed in this, he left him bound, "to show the Jews a pleasure."—Acts xxiii., xxiv.

Fellahs, the people in Egypt who live in villages and cultivate the soil.

They form three-fourths of the population; are the most ancient race in that country, and are generally believed to be the descendants of the old Egyptians, their physiognomy resembling that which is found on the ancient sculptures. They are a patient and laborious population, and were heavily taxed before the period of English influence in the government.

Fellows, Sir Charles, an English archæologist; born in Nottingham, England, in August, 1799; died in Nottingham, Nov. 8, 1860.

Fellows, John, an American author; born in Sheffield, Mass., in 1760; died in New York city, Jan. 3, 1844.

Fellowship, a foundation in an American university, entitling the holder, who is called a fellow, to an annual revenue during the time he is pursuing advanced study along a particular line. The pecuniary value of a fellowship in an American college varies from $250 to $800 per annum.

Felspar, or **Feldspar,** a genus of minerals rather than a single mineral. Formerly there were included under it five species — viz.: (1) Adularia or moonstone, (2) common, (3) compact, (4) glassy, and (5) Labrador felspar. Now Dana elevates felspar into a group.

Felt, the material formed by uniting and compressing fibers of wool, fur, and other substances fit for the purpose, into a compact body, by what is termed the felting process. This consists in mixing the fibers of the materials employed till they become interlaced or matted together in the form of a soft, loose cloth or sheet, which is done by the instrumentality of carding and doffing machines. The cloth is then wound on a roller, and carried to the felting machine, in which the fibers are combined and interlaced still more closely by the action of heat and pressure, till the loose substance is converted into a close, thick material, possessed of great strength and durability.

Felt, Joseph Barlow, an American historical writer; born in Salem, Mass., Dec. 22, 1789. He was well known for his extensive and accurate knowledge of New England history. He died in Salem, Sept. 8, 1869.

Felton, Cornelius Conway, an American classical scholar; born in Newbury, Mass., Nov. 6, 1807. In 1834 he became Professor of Greek Literature at Harvard; in 1860 its president. He died in Chester, Pa., Feb. 26, 1862.

Felucca, a small vessel propelled by oars and lateen sails; it is long and narrow, carrying 8 to 12 oars on each side, and is used where great speed is required. They are common in the Mediterranean.

Femgerichte, Fehmgerichte, or **Vehmgerichte,** the name of celebrated secret tribunals which existed in Westphalia, and possessed immense power and influence in the 14th and 15th centuries. They are said by some to have been originated by Charlemagne, but it is more probable that they were relics of the ancient German courts of justice, which continued to exist in Westphalia after they had ceased in other parts of Germany. Their number is said at one time to have amounted to 100,000.

Their courts were either open or secret; the former were held by day in the open air, the latter by night in a forest, or in concealed and subterranean places. The process of trial, and the circumstances of judgment were different in the two cases; the former decided in all civil causes, the latter took cognizance of such as had been unable to defend themselves sufficiently before the open courts, as well as such as were accused of heresy, sorcery, rape, theft, robbery or murder. The accusation was made by one of the Freischoffen, who, without further proof, declared, upon oath, that the accused had been guilty of the crime. The accused was then thrice summoned to appear before the secret tribunal, and the citation was secretly affixed to the door of his dwelling, or some neighboring place, the name of his accuser being concealed. By an oath the accused might clear himself; but the accuser might also oppose it with his oath and the oaths of witnesses. If the accused could now bring forward six witnesses in his favor, the accuser might strengthen his oath with 14 witnesses; and sentence of acquittal did not necessarily follow until the accused had supported his case with the oaths of 21 witnesses. The judges were all armed, and dressed in black gowns, with a cowl that covered their faces like a mask. The condemned, as well as those who did not obey the summons, were then given over to the Frieschoffen. The first Freischoffe who met him was bound to hang him on a tree; and if he made any resistance it was lawful to put him to death in any other way; and a knife was left by the corpse, to indicate that it was a punishment inflicted by one of the Freischoffen. The punishment, however, was rarely inflicted on those who readily appeared, the judges being satisfied with cautioning the offender to redress the wrong he had been guilty of.

At length a great outcry was raised against these courts, but their influence was not entirely destroyed until the public peace was established in Germany, and an amended form of trial and penal judicature introduced.

Femur, in vertebrate animals the first bone of the leg or pelvic extremity, situated between the os innominatum and the tibia; in insects the third joint of the leg; it is long and generally compressed; also in architecture, the long, flat, projecting face between each channel of a triglyph in the Doric order.

Fencing, the art of using skillfully, in attack or self-defense, a sword, rapier, or bayonet; but usually taken to mean address in the use of the second of these weapons. In the school of fence, the foil is wielded. Fencing is much practised in Germany and some other European countries, but is not so common in the United States.

Fenelon, Francois de Salignac de la Mothe, a French prelate; born in the Chateau de Fenelon, province of Perigord, France, Aug. 6, 1651, was educated at Plessis College in Paris, and at the seminary of St. Sulpice, where he received holy orders in 1675. In 1694 he was created Archbishop of Cambray. A theological dispute with Bossuet, his former instructor, terminated in his condemnation by Pope Innocent XII., and his banishment to his diocese by Louis XIV. He was the author of numerous works on philosophy, theology, and belles-lettres. He died in Cambray, France, Jan. 7, 1715.

Fenians, an Irish secret society named from an ancient military organization of Ireland that became extinct in the 3d century. The Fenian society was formed in the United States probably in March, 1858, by the refugees who crossed the Atlantic after the unsuccessful outbreak of 1848, and had for its object the expulsion of the British government from Ireland, and the conversion of that island into an independent republic. In January, 1864, they began to attract notice in Ireland, and the next year some of them were seized and imprisoned. Between 1865 and 1867 they made various outbreaks. In 1866 they captured a British vessel and made a raid into Canada, but were defeated by the volunteers and censured by President Johnson. In 1867 they unsuccessfully attempted an attack on Chester Castle in England, made other risings, and on Dec. 13 blew in the wall of Clerkenwell prison, killing and wounding a number of innocent people living in the adjacent houses. A second Fenian raid into Canada took place in 1870, but was repelled by the militia. The organization seemed to become dormant about 1874, and various persons who had been connected with it joined the "Invincibles," formed some years later for the purpose of assassinating government officers or others obnoxious to its members or its chiefs, but not much was known of this latter organization until the murder of Lord Cavendish called attention to them. In October, 1903, the element in America which represents Fenian traditions, declared publicly its adherence to the purpose of entirely separating Ireland from Great Britain.

Fenn, George Manville, an English story-writer; born in London, Jan. 3, 1831.

Fenn, Harry, an American artist; born in Richmond, England, Sept. 14, 1838; removed to the United States in 1856 and later traveled extensively. He achieved great success as an illustrator of books, and was one of the founders of the American Water-color Society.

Fennec, a pretty little fox-like animal about 10 inches long, with a tail of about 5¼ inches. The fur is of a whitish hue, the cheeks large, and the snout sharp like that of a fox; the ears are erect, and nearly 3½ inches long. The fennec is found in the whole of Africa. It builds its nest in trees and does not burrow. Its food is mostly vegetable.

Fenton, Reuben Eaton, an American statesman; born in Carroll, Chautauqua co., N. Y., July 4, 1819. He was elected to Congress in 1852, and there opposed the further extension of slavery. In 1856 he was again elected to Congress, where he remained till 1865, when he resigned to become governor of New York, in which office he served for two terms. In 1869–1875 he was in the United States Senate, and in 1878 was chairman of the United States Commission to the International Monetary Conference in Paris. He died in Jamestown, N. Y., Aug. 25, 1885.

Feodor I., Ivanovitch, the last czar of the dynasty of Ruric, on the throne of Russia; born May 11, 1557. He began his reign in 1584. In his reign the peasants of Muscovy were converted into serfs and attached to the land. Previously they had enjoyed personal liberty. The conquest of Siberia was achieved by Goudonoff, and many remarkable diplomatic relations with foreign courts were effected. He died Jan. 7, 1598.

Fer-de-Lance, a dangerous serpent of Martinique, in the West Indies, known also in other islands and in Brazil. It is from five to seven feet long, and is said to launch itself at the person or animal attacked. Its bite is often deadly.

Ferdinand, the name of several European monarchs.

Ferdinand I., son of Francis; born in Vienna, Austria, April 19, 1793; ascended the imperial throne of Austria in 1835, and continued to pursue the policy of his father, leaving the chief direction of affairs in the hands of Metternich. In his reign, the republic of Cracow was annihilated, and a portion of it added to the empire. During the Revolutionary war of 1848 he dismissed Metternich and made several concessions which were found insufficient. Vienna revolted in May, and Ferdinand at length retired to Olmutz, and on Dec. 2, 1848, abdicated, having no children, in favor of his nephew, Francis Joseph I. He died in Prague, Austria, June 29, 1875.

Ferdinand II. of the Two Sicilies (surnamed Bomba, from his bombarding Palermo and other cities during an insurrection, son of Francis I. of Naples, by Isabella of Spain; born in Palermo, Sicily, Jan. 10, 1810; succeeded his father in 1830. At the outset of his reign he professed to adopt constitutional measures for the regeneration of his unhappy country, but unhappily placing himself in the hands of the Jesuits, he became the instrument by which the most odious tyranny was carried into effect. In 1848, when half the thrones in Europe were trembling in the balance, Sicily burst out into open rebellion. Naples followed suit, and Ferdinand was compelled to summon a parliament and take oath to adopt and maintain a constitution. After succeeding in suppressing the Neapolitan revolt, Ferdinand, in 1849 dissolved the parliament, and violated his oath by annulling the constitution. After succeeding in subjugating Sicily, his tyranny knew neither bounds nor sense of common decency, and the revelations respecting it, published in Mr. Gladstone's famous letter to Lord Aberdeen in 1851, evoked one sentiment of indignation and disgust throughout Europe. Even the most absolute of European sovereigns shared in this feeling, and grave remonstrances were addressed to him at the Congress of Paris in 1856. These proving unavailing, France and England proceeded in the same year to recall their ambassadors and suspended all diplomatic intercourse. He died in Naples, May 22, 1859.

Ferdinand V., called The Catholic, son of John II., King of Navarre and Aragon; born in Los, Spain, March 10, 1452. He married in 1469, the Princess Isabella of Castile, in whose right he succeeded on the death of her brother, Henry IV., to the throne of Castile. Later Ferdinand succeeded his father in the kingdom of Aragon, thus reuniting the two crowns of Castile and Aragon. One of the greatest events of this reign was the conquest of Granada. The war with the Moors began in 1483; victory after victory attended the arms of Ferdinand, and in 1492 the capital city was taken after a siege of eight months. The "two kings," as they called Ferdinand and Isabella, made their entrance in January, 1493. The dominion of the Moors in Spain had lasted 800 years. By a cruel edict of the same year, 1493, the Jews in Spain were commanded to receive baptism or quit the country in four months. Multitudes of them, counted at from 30,000 to 170,000, became exiles, and the prisons were filled with those who remained. It was at this period that Columbus, with vessels furnished by Ferdinand and Isabella, made his memorable voyages and discovered America, which the Pope Alexander VI. assumed authority to give to those sovereigns. In 1500 Gonsalvo was sent to make the conquest of Naples, which, partly by the sword and partly by the most unscrupulous perfidy, he effected. The infamous League of Cambray was concluded in 1508. Soon after Navarre was conquered and united to Castile and Aragon. Ferdinand died in Madrigalejo, Spain, Jan. 23, 1516, and was interred in the cathedral of Granada with Queen Isabella.

Ferdinand VII., son of Charles IV.; born in San Ildefonso, Oct. 13, 1784; succeeded his father in 1808. Upon the entry of Napoleon's troops into Spain, Ferdinand was taken prisoner and carried to Valencay, where he and his family remained till 1813, when he was restored to his kingdom. After his restoration he dissolved the Cortes and assumed the powers of an absolute monarch. He reëstablished the Inquisition, and those very liberals who had fought for the expulsion of the French from Spanish soil he persecuted with pitiless rancor. In 1820 his people broke out into rebellion and reëstablished the Cortes. Ferdinand was, however, by the aid of French bayonets, restored to his crown, but not to his former absolutism. He bequeathed the crown to his daughter, Isabella, to the exclusion of his brother, Don Carlos — an act that led to a long and disastrous civil war. He died in Madrid, Sept. 29, 1833.

Ferdinand, Maximilian, Duke of Saxony, Prince of Bulgaria; born in Vienna, Austria, Feb. 26, 1861. In his eagerness to secure the friendship of Russia, and the recognition of the Great Powers as the ruler of Bulgaria, he brought about the conversion of his son, Prince Boris (born Jan. 30, 1894), from the Roman Catholic to the Orthodox Greek faith on Feb. 14, 1896. The same month Turkey recognized his election as ruler and urged the other interested powers to do so, and in April following, the acts of reconciliation and recognition were completed by his being received and dined by the czar and received by the diplomatic corps at St. Petersburg.

Fergus I., King of Scotland, the son of Fergus, King of the Irish Scots. He was invited to Scotland to repel the Picts, and for this was chosen king. He was drowned in his passage to Ireland, about 305 B. C.

Ferguson, Patrick, inventor of the breech-loading rifle; born in 1744 in Pitfour, Scotland. Entering the army in 1759, he served in Germany and Tobago. In 1776 he patented his rifle, firing seven shots a minute, and sighted for ranges of from 100 to 500 yards; and with it he armed a corps of loyalists, who helped at the battle of Brandywine (1777) to defeat the American army. Three years later, on Oct. 7, 1780, Major Ferguson fell, defending King's Mountain, South Carolina, with 800 militia against 1,300 Americans.

Fergusson, Arthur Walsh, an American linguist; born in Benicia, Solano co., Cal., Dec. 4, 1859; was graduated at St. Augustine College, Benicia, in 1877, and at the Georgetown University Law School in 1885. He first came into public notice in 1889 when he was made official interpreter of the American Conference at Washington. Subsequently he was secretary of the International Monetary Commission in 1891; official interpreter of the Intercontinental Railroad Commission in the same year; secretary of the United States Chilean Claims Commission 1893; Secretary of the United States and Venezuelan Claims Commission in 1894; chief translator of the Bureau of American Republics in 1897; official interpreter of the American and Spanish Peace Commission at Paris in 1898; and Spanish Secretary of the United States Philippine Commission in 1900. He is the author of numerous reports, papers, bulletins, etc.

Fergusson, James, a Scotch writer; born in Ayr, Scotland, Jan. 22, 1808. His monumental achievement, which constitutes him perhaps the greatest of writers on the subject, is "History of Architecture in All Countries." After 1859 he was one of the Royal Commissioners to investigate the defenses of Great Britain. He died in London, Jan. 9, 1886.

Feriæ, in ancient Rome, public holidays, during which all labor ceased, and all judicial and political proceedings were suspended.

Feringhee, or **Feringee,** the name given by the Hindus to all Europeans, but chiefly to the English, and is intended to be disrespectful rather than complimentary.

Fermentation, a change which occurs in an organic substance, by which it is decomposed.

Fermo, a walled city of Central Italy, till 1860 capital of a delegation of same name. Fermo was founded by the Sabines before Rome existed, was colonized by the Romans toward the beginning of the First Punic War, and was repeatedly sacked by the Goths and other barbarians. In the 8th century the city was transferred to the Holy See. Pop. 20,895.

GIANT TREE FERN.

Fern, a leafy plant springing from a rhizome, which creeps below or on the surface of the ground or rises into the air like the trunk of a tree. This trunk does not taper, but is of equal diameter at both ends. Most ferns are comparatively small, while some tree ferns reach 75 feet high.

Fern, or **Farne, Islands,** a group of 17 rocky islets off the N. E. coast of Northumberland co., England. Two lighthouses are found here in a vicinity noted for its perils to mariners. St. Cuthbert died here, and his stone coffin is still pointed out. The "Forfarshire" steamer was wrecked here in 1838, when nine persons were saved by the heroism of Grace Darling, the daughter of a lighthouse keeper, and the "Ida Lewis" of England. The islands are the haunt of myriads of sea birds.

Fernald, Chester Bailey, an American writer; born in Boston, Mass., March 18, 1869.

Fernald, Charles Henry, an American zoölogist; born in Mount Desert, Me., March 16, 1838; was educated at the Maine Wesleyan Seminary; was an acting ensign in the United States navy during the Civil War; and Professor of Natural History at the Maine State College in 1871–1886. In the latter year he was appointed Professor of Zoölogy at the Massachusetts Agricultural College.

Fernandez, Diego, a Spanish-American historian; born in Palencia, Spain, about 1530. He was apparently a soldier of fortune, lured to the scene of Pizarro's great conquest in the hope of fabulous wealth. He had some fighting experiences, and wrote "The First and Second Parts of the History of Peru" (1571), a narrative of the subjugation of the Incas. He died in Seville, Spain, 1581.

Fernandez-Lizardi, Jose Joaquin, a Mexican novelist; born in the City of Mexico in 1771. He died in the City of Mexico in June, 1827.

Fernandez-Madrid, Jose, a South American poet; born in Cartagena, Colombia, Feb. 9, 1789; died near London, England, June 28, 1830.

Fernando de Noronha, an island in the South Atlantic Ocean, belonging to Brazil. It is 8 miles long, by a mean breadth of 2 miles, and has a rugged, mountainous, wooded surface. It is used as a penal settlement.

Fernando Po, an island in the Bight of Biafra, 20 miles from the West African coast, and about 40 in length by 20 in breadth. The climate is very unhealthy. The capital is Clarence Cove. This island was discovered in 1471 by the Portuguese, who ceded it to Spain in 1778. The Spaniards eventually abandoned it, and the British, in 1824, selected it as a suitable military depot and naval station. They, in their turn, abandoned it in 1834, on account of its insalubrity. The Spaniards again took possession in 1844, and called the island Puerto de Isabel. It is now used by them as a penal settlement, to which, in 1869, several Cuban patriots were deported, as political prisoners.

Ferney, a village of France, in the department of Ain, five miles N. W. of Geneva. This place not merely owes its celebrity, but even existence, to its having been for a lengthened period the residence of Voltaire. Out of a paltry village, consisting of a few miserable cottages, he constructed a neat little town, in which he established a colony of industrious artisans, consisting principally of watchmakers from Geneva. The chateau, to which a fine small theater was attached, was fitted up in a style of elegant simplicity; and his hospitalities were on the most liberal scale. Voltaire resided here, with little interruption, for more than 20 years. Voltaire quitted Ferney for the last time on Feb. 6, 1778. Admirers of Voltaire still make pilgrimages to Ferney, although the castle in which he lived has undergone so many alterations that it contains but few relics of him.

Fernie, Benjamin James, journalist; born at Hales Owen, England, Nov. 29, 1842. Educated for the ministry in the Congregational church, but becoming associated with friends on the London press, entered the ranks of journalism. After service on several newspapers in London and the provinces, became Assistant Editor of "The Christian Herald" of London. In 1878 he established an American Edition of that journal, now the widest circulated religious paper in the world, and with which he is still prominently identified.

Fernow, Bernhard Eduard, an American scientist; born in Inowraclaw, Germany, Jan. 7, 1851. In 1898 he was made director and dean of the New York State College of Forestry at Cornell University.

Fernow, Berthold, an American author; born in Inowraclaw, Germany, Nov. 28, 1837. He removed to the United States; became a private in the 4th Missouri Cavalry in 1862; and was promoted lieutenant of the 3d United States Colored Infantry in 1863. He was archivist of New York State in 1876–1889.

Ferrara, a fortified city of Central Italy, capital of province of same name, and formerly an independent duchy under the rule of the House of Este. Under the rule of its native princes Ferrara was the seat of one of the most polished and refined of the Italian courts, and is said to have had from 90,000 to 100,000 inhabitants. But it has long been in a state of decay, and numbers of its splendid palaces are uninhabited. Ariosto resided in this city, and here, in 1516, was published the first edition of his immortal "Orlando"; and here, too, in 1533, he breathed his last. The house in which he lived is still carefully preserved. Ferrara besides being the birthplace was also the place of imprisonment of the poet Tasso.

Ferret, a useful but ferocious little animal, kept in a domesticated state and used for rabbit hunting as well as for destroying rats. In its general form it resembles the polecat, but is rather smaller, its usual length being about 13 inches, exclusive of the tail, which is about 5. It has a very sharp nose, red and fiery eyes, and round ears. Its color is a pale yellow. In the slenderness of its body and the shortness of its legs it resembles the weasel. In its wild state it is a native of Africa. The cold of our winters is so severe for it, that it becomes necessary to keep it in a warm box, with wool or some other substance in which it may imbed itself. In this state it sleeps almost continually; and when awake immediately begins to search about for food: that which is usually given is bread and milk, but its favorite food is the blood of smaller animals. It is by nature an enemy to rabbits; and when sent into their burrows is always muzzled, that he may not kill the rabbits in their holes, but only to drive them out to be caught in the nets prepared for them. The ferret is tame without attachment; and such is its appetite for blood that it has been known to attack and even kill children in their cradles. It is of an irascible nature, and when irritated, the odor it emits is very disagreeable, and its bite is not easily cured. The female has two broods in the year, each consisting of from six to nine. She not unfrequently devours her young as soon as they are born.

Ferrier, Susan Edmonstone, a Scotch novelist; born in Edinburgh, Scotland, Sept. 7, 1782; died in Edinburgh, Nov. 5, 1854.

Ferris, George W., an American engineer; born in Galesburg, Ill., Feb. 14, 1859; was graduated at Rensselaer Polytechnic Institute in 1881. He conceived the idea of a gigantic revolving wheel which he built in Pittsburg and erected for the World's Columbian Exposition in Chicago in 1893. The wheel could hold more than 1,000 passengers, and during the Exposition it was one of the great attractions. Ferris died in Pittsburg, Pa., Nov. 22, 1896.

Ferrol, a Spanish seaport in Galicia, Spain; on a narrow arm of the sea, 11 miles by water and 33 by rail N. E. of Corunna. A poor fishing town till 1752, it now is one of the strongest fortified places in the kingdom, and possesses one of its three largest arsenals (with dockyards, naval workshops, etc.), while the annual trade reaches about £500,000. The harbor is safe and capacious, and has a very narrow entrance, defended by two forts. The town has manufactures of naval stores, linen, cotton, and leather, and exports corn, brandy, vinegar, and fish. In 1805 a French fleet was defeated by the English off Ferrol. The town was taken by the French in 1809 and 1823, and in 1872 was the scene of a republican rising.

Ferry, Gabriel, the Elder, pseudonym of Eugene Louis Gabriel Ferry de Bellemaire, a French author; born in Paris, France, May 30, 1809. He made repeated voyages to the United States; in his last voyage, to California, he lost his life in the burning at sea of the ship "Amazon," in 1852. His stories are popular in France.

Ferry, Gabriel, the Younger, a French author, dramatist, and novelist, son of Gabriel the Elder and continuing his pseudonym; born in Paris, May 30, 1846.

Ferry, Jules Francois Camille, a French statesman; born in Saint Die, France, April 5, 1832; was admitted to the Paris bar in 1854, and speedily identified himself with the opponents of the empire. He was minister to Athens in 1872–1873, and in 1879 became minister of public instruction and began an agitation against the Jesuits. Their expulsion was effected, and brought about the dissolution of the ministry in September, 1880. M. Ferry then formed a cabinet, which remained in office till November, 1881. In February, 1883, he again became premier, with a policy of colonial expansion, involving a war in Madagascar and the invasion of Tonquin, where a disaster to the French troops brought about his downfall in March, 1885. In 1890 he was made senator. He died in Paris, March 17, 1893.

Fersen, Axel, Count, a Swedish military officer; born in Stockholm, Sweden, in 1755; came to America on the staff of Rochambeau; fought under Lafayette and received from Washington the Order of the Society of the Cincinnati. He returned to Sweden, where he was received with honor, and in 1801 was made grand marshal of that country. On suspicion of complicity in the death of Prince Christian of Sweden, he was seized by a mob while marshaling the funeral procession, and tortured to death, June 20, 1810. His memoirs in which he virtually foretold the secession of the South from the Union show that he was an acute observer.

Fertilization, the fecundation of a plant by the application of the pollen to the stigma. In some cases the pollen simply drops on the stigma, which is called self-fertilization. In most instances, however, it is blown by the wind, or carried by bees, or moths, or other insects, from other flowers of the same species. This is what is termed cross-fertilization. Mr. Darwin found that 20 heads of dutch clover left open to the visits of bees produced 2,290 seeds; the same number defended from the visit of bees, did not yield even one seed.

Fesch, Joseph, Cardinal Archbishop of Lyons, and brother of Letitia Ramolini, mother of Napoleon I.; born in Ajaccio, Corsica, Jan. 3, 1763. He was educated in France for the Church; in 1790 he was appointed by his nephew, General Bonaparte, commissary-general of the army of Italy, in which capacity he realized a princely fortune. He afterward resumed his clerical studies, and adopting the profession, was, in 1802, consecrated Archbishop of Lyons. In the year afterward, Fesch received a cardinal's hat and was sent to Rome as French ambassador. In 1804 he accompanied Pius VII. to Paris, to assist at the emperor's coronation, and in the following year was created Grand Almoner of France. As president of the Council of Paris he energetically opposed his nephew on many occasions, and especially espoused the cause of the unfortunate Pope. He finally fell into disgrace with the emperor, and retired to Rome, where he passed the remainder of his life in dignified ease and affluence, possessing the finest library and picture-gallery that even Rome could boast of. He died in Rome, May 13, 1839.

Fessenden, Thomas Green, an American author, who wrote partly under the name "Christopher Caustic"; born in Walpole, N. H., April 22, 1771; died in Boston, Mass., Nov. 11, 1837.

Fessenden, William Pitt, an American statesman; born in Boscawen, N. H., Oct. 16, 1806; was graduated at Bowdoin College in 1823 and admitted to the bar in 1827. He entered politics and soon acquired a national reputation as a lawyer and a Whig. He was elected to the United States Senate in 1854, and a week after he took his seat made a speech against the Kansas-Nebraska Bill which placed him in the front rank of senatorial orators. During the Civil War he was conspicuous for his efforts to sustain the national credit. He was made Secretary of the Treasury in 1864, and, having placed it on a firm basis, resigned in 1865 to return to his seat in the Senate. He died in Portland, Me., Sept. 8, 1869.

Fessler, Ignaz Aurelius, a Hungarian author; born in Czurendorf, Hungary, May 18, 1756. A Capuchin priest, his secret communication to Joseph II. in 1781 regarding the monasteries brought about a radical reformation of them. Appointed Professor of Oriental Languages in the Vienna University, he had to leave the post and Austria for his atheistic and seditious tragedy "Sidney" (1787); similar reasons cost him a professorship in the Alexander Nevsky Academy of St. Petersburg; afterward he became general superintendent of the Lutheran congregations in that city. He died in St. Petersburg, Russia, Dec. 15, 1839.

Festus, Porcius, pro-Consul and Governor of Judæa, before whom St. Paul was accused by the Jews; but the apostle appealing to the emperor, Festus sent him to Rome. Also, a celebrated Latin grammarian who lived between the 2d and 4th centuries. He compiled some voluminous works on his favorite science, and is classed by Scaliger among the best or most useful etymologists for understanding the language of ancient Rome.

Fetichism, or **Feticism,** the worship of material substances, such as a carved image or fetich, and prevails very extensively among barbarous nations, especially those of the negro race. Among them, tribes, families, and individuals, have their respective fetiches; which are often objects casually selected, as stones, weapons, vessels, plants, etc., and the rude worshipper does not hesitate to chastise, or even throw away or destroy his fetich, if it does not seem to gratify his desires. Applied also to irrational devotion to any subject or idea.

Fetterolf, Adam H., an American educator; born in Perkiomen, Pa., Nov. 24, 1841; was educated at Ursinus College; became vice-president of Girard College in Philadelphia, Pa., in 1880, and president in 1882.

Feudal System, that constitutional system which was introduced into Europe by the N. nations after the fall of the Roman power, and which has left important traces of its existence in most European countries. The constitution of feuds had its origin in the military policy of the Goths, Huns, Vandals, and other N. nations who overran Europe at the declension of the Roman empire. The term feud is of very doubtful derivation, but most probably it is formed from the Teutonic fee or feh, wages or pay for service, and odh, or od, property or possession; a feud, then, being the property or possession given as wages for service. In order to secure their newly acquired possessions, and at the same time to reward their deserving followers, the conquering generals were wont to allot large districts, or parcels of land, to the superior officers of the army, and these were by them again dealt out in smaller allotments or parcels, to inferior officers and soldiers.

The condition annexed to these holdings was that the possessor should do service faithfully, both at home and in the wars, to him by whom they were given; for which purpose he took the oath of fealty and in case of the breach of this condition and oath, by not performing the stipulated service, or by deserting the lord in battle, the lands were again to revert to him who granted them. The ownership of the land, therefore, properly remained in the hands of the superior, and probably at first was resumable by him at pleasure, or at least on the death of the holder; but in most countries, lands soon came to assume an hereditary character, the rights of a superior, on the death of a vassal, being confined to the exaction of certain dues from his son and successor, as a consideration for confirming to him the feud which his father had held. Where the land descended to a female, the superior was entitled to control her marriage, for the purpose of procuring a trustworthy vassal, a privilege which, like the other, was afterward converted into a pecuniary payment.

According to this system, every receiver of land, or feudatory, was bound, when called on, to serve his immediate lord or superior, and to do all in his power to defend him. Such lord or superior was likewise subordinate to, and under the command of, a higher superior or lord; and so on upward to the prince or general himself. The several lords were also reciprocally bound in their respective gradations to protect the possessions they had given. Thus the connection between lord and vassal was made to wear all the appearance of a mutual interchange of benefits — of bounty and protection on the one hand, and of gratitude and service on the other. In this way the feudal connection was established, and an army was always at command, ready to fight in defense of the whole or of any part of the newly-acquired territory. The wisdom of these measures became evident to the other princes of Europe, and many of them who were independent adopted this system as a means of strengthening their power, parcelling out their royal territories, or persuading their subjects to surrender up and retake their own landed property under the like feudal obligations of military fealty. Thus the feudal constitution, or doctrine of tenure, extended itself over all the W. world; and the feudal laws drove out the Roman, which had hitherto universally prevailed.

This system was adopted in most countries of Europe from the 9th to the end of the 13th century; but it differed in various particulars in the different countries. Though there can be no doubt that feudal principles prevailed to a considerable extent in the polity of the Saxons in England, yet it was only when that country was conquered by the Normans that it was regularly established. In some respects, however, the system of feudalism established in England differed from that of France, from which it was taken. One of these was that the king was the universal lord and original proprietor of all the lands in his kingdom, and that no man could possess or hold any part of it but what was mediately or immediately derived from him, to be held mediately or immediately of him on feudal service. Hence the Conqueror introduced the practice of compelling those holding mediately as well as immediately of himself to swear fealty to him; and thus the inferior vassals were under two oaths — the one of fealty to the king, the other of fealty to their immediate superior. It has been remarked, however, that when the two interests came into collision, the vassal rarely failed to obey his lord rather than his king.

A country, under the feudal law,

was divided into knights' fees, the tenant of each of which appears to have been obliged to keep the field at his own expense for 40 days whenever his lord chose to call on him. For smaller portions of land, smaller periods of service were due. Every great tenant exercised a jurisdiction, civil and criminal, over his immediate tenants, and held courts and administered the laws within his lordship like a sovereign prince. The existence of manor-courts and other small jurisdictions within the kingdom is one of the features of the feudal system. The land escheated to the lord when the tenant left no heir, and it was forfeited to him when he was found guilty either of a breach of his oath of fealty or of felony. There were also fines payable to the lord on certain occasions, as well as aids, reliefs, etc. The vassal had also to attend the lord's courts, sometimes to witness, and sometimes to take part in, the administration of justice; in battle he was bound to lend his horse to his lord if dismounted, to keep his side while fighting, and go into captivity as a hostage for him when taken. It was a breach of faith to divulge his (the lord's) counsel, to conceal from him the machinations of others, to injure his person or fortune, or to violate the sanctity of his roof. The nearest approach to the feudal system in the United States was the tenure by which tenants held from the patroons of manors on and near the Hudson. It nearly caused civil war in New York State and has long been abolished. The right of eminent domain is inherited from the feudal system, the State taking the place of the Crown.

Feuerbach, Anselm, a German archæologist, brother of Ludwig; born Sept. 9, 1798. His "Vatican Apollo" (1833), and essays and studies in classic art and art history, are of great merit and importance. He died Sept. 8, 1851.

Feuerbach, Ludwig Andreas, a German philosopher; born in Landshut, July 28, 1804; died in the Reichenberg, near Nuremberg, Sept. 13, 1872.

Feuerbach, Paul Johann Anselm von, a German penalogist; born in Hainichen, near Jena, Nov. 14, 1775; died in Frankfort-on-the-Main, May 29, 1833.

Feuillants, a reformed branch of the Cistercian order of monks. It was founded by Jean de la Barriere, abbot of the Cistercian monastery of Feuillans near Toulouse, in 1577, who, being opposed to the great laxity of discipline that then prevailed, introduced a much more austere mode of life. They practised great austerities, going barefoot, and living only on herbs.

Feuillet, Octave, a French novelist; born in St. Lo, Aug. 11, 1821. He was elected to the Academy in 1863. Beginning as a novelist of the discreetest sort, he ended in much the fashion of other French story-writers. He died in Paris, Dec. 29, 1890.

Feval, Paul, a French novelist; born in Rennes, Sept. 27, 1817; died in Paris, March 8, 1887.

Fever (from Latin febris, connected with ferveo, I burn), a disease that may be described thus: After a degree of chilliness and shivering, accompanied and succeeded by a feeling of languor, restlessness, weakness, nausea, and want of appetite, and more or less headache, there is a preternatural heat of the body, which is indicated by a dry, burning skin; there is also excessive thirst, cold water being the drink which the patient has the most craving for. The pulse becomes much accelerated, there is increased waste of tissue, great muscular debility, and most of the functions are disturbed. This morbid state is noticeable among the phenomena of many diseases, and is then termed symptomatic fever, but the same symptoms, when observed in other circumstances, are characteristic of the fevers proper, which may be classified as follows:

1. Continued Fever.—(1) Simple fever, or febricula. (2) Typhus fever. (3) Typhoid, enteric, or gastric fever. (4) Relapsing, or famine fever.

2. Intermittent Fever, or Ague.

3. Remittent Fevers.—(1) Simple remittent fever. (2) Yellow fever.

4. Eruptive Fevers.—(1) Smallpox. (2) Cowpox. (3) Chickenpox. (4) Measles. (5) Scarlet fever. (6) Erysipelas. (7) Plague. (8) Dengue fever.

Simple fever, or febricula, may last from one or two to 10 days, and may arise from cold or any slight cause, disordering the several functions of the economy. It commences with a feeling of chilliness. There are also a feeling of lassitude, pains in the back and limbs, loss of appetite, and nausea. After a few hours the pulse becomes accelerated, and the temperature of the body rises; these phenomena are accompanied by thirst, headache, a furred tongue, a constipated state of the bowels, and a deficiency in the urinary secretion. The symptoms are generally aggravated at night, and may even be accompanied by slight delirium. After a few days the symptoms abate, and the patient begins to recover, but very often the convalescence is somewhat slow.

Fez, a city of Morocco, capital of the province, and residence of a kadi or governor. It is singularly and beautifully situated in a funnel-shaped valley, open only to the N. and N. E., the sloping sides of which are covered with fields, gardens, orchards, and groves, 95 miles from the Atlantic, 225 N. E. of Morocco. Fez contains about 100 mosques, the chief of which, called El Carubin, possesses a covered place for women who may choose to participate in public prayers — a circumstance unique in Mohammedan places of worship. Old Fez was founded in 793 by Edris II., a descendant of Mohammed, and continued the capital of an independent kingdom till 1548, which was then annexed to Morocco. Fez has always been held so sacred by the Arabs and others, that when the pilgrimages to Mecca were interrupted in the 10th century, the Western Moslems journey to this city; and even now none but the Faithful can enter Fez without express permission from the emperor. Pop. estimated at 140,000, of which about three-fourths are Moors and Arabs.

Fezzan, a country of Central Africa, immediately S. of Tripoli, to which it is tributary. Its true boundaries are ill-defined, and its area is uncertain. Fezzan is, as far as has been ascertained, the largest oasis, or cultivable tract in the great African desert of Sahara by which it is surrounded on three sides. The ostrich and antelope are commonly met with, while to the ordinary domestic animals camels may be added. In summer the temperature is insupportably hot, and, on the other hand, the cold of winter is sufficiently severe to be acutely felt by the natives. Fezzan derives its chief importance as being a depot for the great caravan traffic between Egypt and Barbary, and the countries to the E. and S. of the Niger. Capital, Mourzouk.

Fiber, or **Fibre,** a filament, or thread, the minute part of either animal or vegetable substances.

Fibiger, Johannes Henrik Tauber, a Danish poet; born in Nykjobing, Jan. 27, 1821.

Fibrin, or **Fibrine,** a substance formerly held to be an albuminoid or proteid development which is contained in the blood, and causes it to clot, but is now considered a waste matter produced by incipient decomposition.

Fichte, Immanuel Hermann von, a German philosopher, son of Johann; born in Jena, July 18, 1796; was a mystic theist, but tried to frame a compromise which should not exclude disbelief in a supreme being. He died in Stuttgart, Aug. 8, 1879.

Fichte, Johann Gottlieb, a German philosopher; born in Rammenau in Upper Lusatia, May 19, 1762. He was appointed Professor of Philosophy in the University of Jena in 1794; and the following year published his "Doctrine of Science," a fundamental departure from Kant. He died in Berlin, Jan. 27, 1814.

Fidgets, the colloquial name of the disease or morbid symptom called dysphoria. It consists of an overpowering sense of restlessness; or more specifically, there are present, irritability, dissatisfaction, a sense of fullness in the extremities, thirst, dryness if skin, wakefulness during the greater part of the night, the patient perpetually altering his position in the vain endeavor to obtain relief. About two or three in the morning perspiration generally ensues, followed by heavy slumber.

Field, Mrs. Caroline Leslie, an American author; daughter of Mrs. A. D. T. Whitney; born in Milton, Mass.

Field, Cyrus West, an American capitalist; born in Stockbridge, Mass., Nov. 30, 1819; received a fair education. About 1845 he turned his attention to ocean telegraphy, and long meditated the question whether or not a cable could be stretched across the Atlantic. In 1854 the Newfoundland Legislature granted him the right for 50 years to land cables between the United States and Europe on that island. He later organized the New York, Newfoundland, and London Telegraph Company. In 1866, after many disappointments and failures, a cable was successfully stretched across the ocean. For his achievement Congress voted him a gold medal and the thanks of the people. In 1867 the Grand Medal, the highest honor in the Paris Exposition, was bestowed on him. He died in New York city, July 12, 1892.

Field, David Dudley, an American jurist; born in Haddam, Conn., Feb. 13, 1805; was admitted to the New York bar in 1828; practised till 1885, distinguishing himself especially by his labors in the direction of a reform of the judiciary system. In 1857 he was appointed by the State to prepare a political, civil, and penal code, of which the last was adopted by New York, and all have been accepted by some other States. In 1866, by a proposal brought before the British Social Science Congress, he procured the appointment of a committee of jurists from the principal nations to prepare the outlines of an international code, which were presented in a report to the same congress in 1873. This movement resulted in the formation of an association for the reform of the law of nations, and for the substitution of arbitration for war, of which Mr. Field was the first president. He died in New York city, April 13, 1894.

Field, Eugene, an American journalist; born in St. Louis, Mo., Sept. 2, 1850. By his poems and tales in the press he won a high reputation in the West, which before his death had become national. He died in Chicago, Ill., Nov. 4, 1895.

Field, Henry Martyn, an American clergyman and scholar; born in Stockbridge, Mass., April 3, 1822; brother of Cyrus West and Stephen Johnson Field; graduated at Williams College, and was ordained to the ministry in 1842. In 1854 he became editor and proprietor of the New York "Evangelist."

Field, Kate, an American author and lecturer; born in St. Louis, Mo., about 1840. During several years she was European correspondent of various papers. She founded "Kate Field's Washington," in Washington, D. C. She died in Honolulu, Hawaii, May 19, 1896.

Field, Marshall, an American philanthropist; born in Conway, Mass., in 1835; received an academic education; began business in Pittsfield, Mass., as a clerk in a dry goods store; removed to Chicago in 1856; entered the same business; and rose to the head of the firm. He founded the Field Columbian Museum in Chicago; gave to the University of Chicago land valued at $200,000; to the Home for the Incurables, land valued at $40,000; and to Conway, Mass., a public library with 6,000 books.

Field, Stephen Johnson, an American jurist; born in Haddam, Conn., Nov. 4, 1816; brother of Cyrus West Field; graduated at Williams College; studied law and was admitted to the bar; removed to San Francisco in 1849. Soon after he settled in the newly organized city of Yubaville, of which he was appointed justice of the peace. He was elected to the first legislature under the California constitution; prepared a code of mining, civil and criminal laws, which was generally adopted in the Western States; became a justice of the Supreme Court of California in 1857; was appointed its chief-justice in 1859; and in 1863 was appointed an associate justice of the United States Supreme Court, which office he resigned in April 1897. He died in Washington, D. C., April 9, 1899.

Field Cricket, a species of cricket found in hot sandy localities, where it burrows to a depth of 6 to 12 inches. It feeds on insects, for which it lies in wait at the mouth of its burrow.

Field-marshal, the highest military dignity in Great Britain, Germany, and other European countries. George II. introduced the title into England when, in 1736, he created the Duke of Argyll and the Earl of Orkney field-marshals, but it had been long in use in the German armies, and is of German origin. In Great Britain the dignity is conferred by selection and is held by but few officers.

Fielding, Henry, an English novelist; born in Sharpham Park, Somersetshire, April 22, 1707, of the blood of the Hapsburgs. After ill success as playwright and lawyer he embarked upon a literary career, in which he won fame. He died in Lisbon, Oct. 8, 1754.

Field of the Cloth of Gold, the place where Henry VIII., of England, and Francis I., of France, held interviews, between Guisnes and Ardres, near Calais, June 7–24, 1520. Such was the magnificence displayed that the place of the meeting was named as above.

Fields, Annie (Adams), an American poet and essayist, wife of James T. Fields; born in Boston, Mass., in 1834.

Fields, James Thomas, an American publisher and author; born in Portsmouth, N. H., Dec. 31, 1817. The various publishing firms of which he was partner, with Ticknor, Osgood, and others, were of the first rank. He edited the "Atlantic Monthly" in 1862–1870. He died in Boston, Mass., April 24, 1881.

Field Vole, the short-tailed field mouse. It usually frequents damp places, forming burrows of considerable extent. Its food consists almost exclusively of vegetable substances.

Fieri Facias, a writ which lies for him who has recovered in an action for debt or damages to the sheriff, commanding him to levy on the goods and chattels of the defendant the sum or debt recovered.

Fieschi, Joseph, a Corsican conspirator; author of one of the most terrible conspiracies of history. Having conceived a hatred for the French king, Louis Philippe, he constructed an infernal machine of about 100 gun-barrels fixed in a frame, which he discharged simultaneously, during a review of the National Guard, July 28, 1835. The king escaped unhurt, but Marshal Mortier and 17 people were killed, and many more wounded. Fieschi, and his accomplices, Pepin and Morey, were guillotined, Feb. 16, 1836.

Fiery Cross. Formerly among the Scotch Highlanders when a chieftain desired to summon his clan he slew a goat and, making a cross of any light wood, seared its extremities in fire, and extinguished them in the blood of the animal. This was called the fiery cross, also creau tarigh, or the cross of shame, because disobedience to the symbol inferred infamy. It was delivered to a messenger, who ran with it to the next hamlet, where he presented it to the principal person, with a single word, the place of rendezvous. He who received the symbol was bound to send it forward to the next village; and thus it passed through all the district. At the sight of the fiery cross, every man, capable of bearing arms, was obliged to repair to the place of rendezvous. He who failed to appear, suffered the extremities of fire and sword.

Fife, a wind-instrument, resembling a small flute in its form and method of performance, seldom having any keys, and never more than one. It is chiefly used in martial music.

Fifteen-spined Stickleback, a marine species of stickleback, 5 to 7 inches in length, which makes its nest of seaweed and guards the eggs like the fresh-water species.

Fifth-monarchy Men, in English history, a set of fanatics who formed a principal support of Cromwell during the Protectorate. They considered his assumption of power as an earnest of the foundation of the fifth monarchy, which should succeed to the Assyrian, the Persian, the Grecian, and the Roman, and in which Jesus Christ should reign with the saints on earth for the space of 1,000 years.

Figaro, a dramatic character, brought on the stage in Paris about 1785. Since that time, Mozart, and others, have made the name celebrated in classic operas; and now the term is frequently used to denote an adroit and cunning accomplice.

Fig Tree, a tree of the mulberry family, a native of Western Asia, and is extensively cultivated in California, the annual product being of great value. It was early introduced into the islands and countries on both sides of the Mediterranean and Southern Europe. There are many varieties cultivated.

Figueroa, Francisco de, a Spanish poet born in 1540. When dying (in 1620) he burned all his verses; but they were published from copies in the hands of his friends. He was called by his contemporaries "the Divine Figueroa."

Figueroa, Francisco, a Mexican historian; born in Toluca in 1730; was a Franciscan priest and taught and lectured well; but his great service to literature consisted in the compilation of materials for a history of Mexico. He died in the City of Mexico in 1800.

Figueroa, Francisco Acuna de, a Uruguayan poet; born in Montevideo in 1791. He has been assigned a high rank by competent critics; lofty inspiration and sonorous diction being his characteristics, exemplified in the "National Hymn of Uruguay." He died in Montevideo, Oct. 6, 1862.

Figuier, Guillaume Louis, a French scientist; born in Montpellier, Feb. 15, 1819; died in Paris, Nov. 8, 1894.

Fiji Islands, a group of over 200 islands belonging to Great Britain, in the South Pacific Ocean. Their total area is 8,035 square miles. The two largest are the Viti Levn, with an area of 4,112 square miles, and the Vanna Levn, with an area of 2,432 square miles. The islands are mostly mountainous and have a fertile soil, and luxuriant vegetation. The forests contain valuable timber. In 1874 the group was voluntarily ceded to England by the king and chiefs. The government is administered by a governor, who is also consul-general for the Western Pacific. The legislative council consists of six official and six unofficial members. Pop. 117,870.

Filament, a slender, thread-like process; a fiber or fine thread of which flesh, nerves, skin, roots, etc., are composed. The filament is usually continuous from one end to the other, but in some cases it is bent or jointed. In electricity, the carbon thread in an incandescent lamp bulb.

Filander, in zoölogy, a species of kangaroo found in the N. of Australia, in the region of King George's Sound. It is about the size of a common rabbit. It is also called the short-tailed kangaroo.

File, the term applied to two soldiers standing one before the other, or conjointly to any soldier in the front rank and the one who stands directly behind him in the rear rank, when the company is drawn up in line. A body of soldiers is often spoken of as consisting of so many rank and file; this includes the privates and the non-commissioned officers except the sergeants. Men marching singly in line are said to march in "Indian file," after the custom of the American Indians.

On file, preserved for reference or security, in collected order and condition; as, newspapers are on file.

File Fish, a name given to a family of fishes from the toothed character of the dorsal spine. The orange file fish is common on the coast of New England.

Fileti-Ramondetta, Concettina, an Italian poet; born (Ramondetta) in Palermo, Sicily, Dec. 31, 1830. Her childhood was passed in comparative poverty, and she had little formal schooling. Her talent was precocious, and at 16 she wrote verses which captivated the public. Becoming a wife and mother her association with the Muse was intermittent in later years.

Filibuster, a sea-rover; sometimes applied to any military adventurer who undertakes an expedition against a territory, unauthorized by law or the exigencies of war. The term filibuster was first applied in New Orleans to certain adventurers who, after the termination of the war between this country and Mexico, exerted themselves with setting on foot within the United States military expeditions designed to operate in the Spanish-American countries to the S. of us. The pretended object of these expeditions was the emancipation of those countries from tyranny, and the introduction of democratic institutions after the model of the United States. Though the setting on foot of such expeditions is contrary to our neutrality laws, yet the laws were frequently evaded. The most noted expedition of this sort was that led by Walker against Nicaragua in 1856, and which resulted in Walker being shot, when he attempted to lead a second expedition into the country in 1860.

Filicaia, Vincenzo da, an Italian poet; born in Florence, Dec. 30, 1642. He was a great poet, but lived for a long time in poverty. When this was relieved by eminent patronage in later years, the death of his loved ones clouded his prosperity. He died in Florence, September 24, 1707.

Filigree, a delicate species of ornamental work in gold or silver, wrought in little threads of the metal intertwisted in eccentric forms and patterns.

Filigree Glass, one of the kinds of ornamental glass for which Venice was formerly celebrated, the manufacture of which has been recently revived.

Fillet, in ordinary language, a band of metal, linen, or ribbon worn round the head. Also the fleshy part of the thigh; applied most commonly to veal. Also portions of meat or fish removed from the bone and served either flat or rolled together and tied round; the term is specially applied to the undercut of the sirloin of beef, served whole or cut into steaks, and to slices of flat-fish removed from the bone.

Fillipeen, or **Phillipena,** a small present. When a person eating nuts finds one with a double kernel, he or she gives it to one of the opposite sex, and the individual who, at the next meeting, or after the acceptance by the other of something tendered first utters the word fillipeen, is entitled to a present from the other.

Fillmore, Millard, an American statesman, 13th President of the United States; born in Summer Hill, Cayuga co., N. Y., Feb. 7, 1800. He rose from the humblest beginnings to the highest position attainable by an American citizen. Apprenticed to a wool-carder in his father's locality, he made amends, by his zeal in the pursuit of knowledge, for the scantiness of his means; and before he was of age, his talents and aptitude procured him the notice and esteem of Judge Wood, an eminent lawyer of his native county, who invited the young man to a desk in his office, and offered to defray his expenses while he qualified himself for the profession of the law. Fillmore accepted the offer to a certain extent, while he contrived, by teaching in a school, to press as lightly as possible on the generosity of his benefactor. In 1821 he removed to Erie county, and pursued his legal studies in the city of Buffalo. In 1827 he was admitted as an attorney; in 1829, as a counsellor in the supreme court; and in 1830 he entered into partnership with an older member of the bar. It was in 1829 that he commenced his political career as a representative of Erie county in the State Legislature, and in 1832 he was elected to the Congressional House of Representatives. For a number of years he alternated between political life and the exclusive practice of his profession, rising steadily in the general estimation as an able lawyer and consistent and promising leader of the Whig party. Elected in 1847 to the important post of comptroller of the State of New York, he enjoyed in 1848 the still higher honor of being elected by his party as Vice-President of the United States. The new President, General Taylor, entered on his office in March, 1849, and on his sudden death in July, 1850, Fillmore became, in virtue of his office, President of the United States. He was installed in the White House at what was, in several respects, a critical moment in the history of the Union. It was the era of the Lopez expedition against Cuba; and of a more than usual bitterness in the relations between North and South on the slavery question. Fillmore made Daniel Webster his Secretary of State, an appointment which strengthened and popularized his administration. President Fillmore's messages favored the fugitive slave law, and recommended a protective, but not a prohibitory tariff. Under his presidency California was admitted as a new State into the Union. In his final message he had to deplore the death of Webster; and in March, 1853, he yielded up his office to his successor, General Pierce. He was the candidate of the American party for the presidency in 1856, but he received a very small minority of votes. Fillmore was then visiting Europe, and was received at the principal courts with the distinction which his character and career claimed for him. After his retirement from public life he resided in Buffalo, N. Y., where he died, March 8, 1874.

Film, a transparent, flexible substance used as a substitute for glass plates for photographic work.

Filon, Auguste, a French historian; born in Paris, France, June 7, 1800; died in Paris, December 1, 1875.

Filter, a twist of thread, of which one end is dipped in the liquid to be purified, and the other hangs below the bottom of the vessel, so that the liquor drips from it. Also a vessel, chamber, or reservoir through which water or other liquid is passed to arrest matters mechanically suspended therein. The term is also applied to an apparatus for arresting dust, steel filings, smoke, etc., in the air breathed.

Filter Bed, a settling pond whose bottom is a filter.

Fin, the organ by which locomotion is effected in a fish. As a rule fins consist of a membrane supported by rays.

Finance, the art of managing money matters, the person who professes this art being called a financier. Finances is often used for money itself, but with a reference to the purpose to which it is to be applied, as where the finances of a country are said to have improved or fallen off. Sometimes the word is applied to private wealth, but it is properly applicable to public funds. It is used in the United States as in England, rather in a political and economic sense than officially; but in France there is at the present time a Minister of Finances, corresponding to the Secretary of the Treasury of the United States.

Finch, Francis Miles, an American poet, and a judge of the United States District Court; born in Ithaca, N. Y., June 9, 1827. He is the author of "The Blue and the Gray."

Finck, Henry Theophilus, an American musical critic and author; born in Bethel, Mo., Sept. 22, 1854. He graduated at Harvard in 1876; and from 1878 to 1881 studied physiological psychology at Berlin, Heidelberg, and Vienna. He has been musical critic of the New York "Evening Post."

Findlay College, a co-educational institution in Findlay, O.; founded in 1882 under the auspices of the Church of God.

Findley, John Haston, an American educator; born near Ottawa, Ill., Oct. 19, 1863; graduated at Knox College; studied for two years in Johns Hopkins University; was secretary of the State Charities Aid Association and president of Knox College. He was editor of "Harper's Weekly" and in June, 1900, accepted the chair of politics in Princeton University.

Fine Arts, a term generally applied to those arts in which the artist seeks chiefly to give pleasure by the immediate impression produced on the mind by his work. These arts are thus distinguished from arts which are designed to answer some practical purpose, and so have been termed useful.

Fingal, a personage celebrated in the poems of Ossian, who was his son. He was Prince of Morven, a province of ancient Caledonia, and struggled against the power of the Romans, who were in his time, the rulers of England. He also undertook warlike expeditions to the Orkneys, Ireland, and even Sweden. He lived in the 3d century.

Fingal's Cave, a curious cavern formed of basaltic columns, in the Isle of Staffa, one of the Hebrides, on the W. coast of Scotland, 25 miles from Oban.

Finish, in art, the last touches applied to a picture or work of art. In building, the last raw coat of plaster on a wall.

Finistere, the extreme W. department of France, formerly a part of the province of Brittany; surrounded on three sides by the Atlantic and British Channel; length, 65 miles; breadth about 55 miles; area, 2,595 square miles; pop. (1901) 763,193. Chief towns, Quimper (the capital), Brest and Morlaix.

Finland, Grand Duchy of (called by the natives, Suomen-maa, "land of marshes"), a country of Northern Europe, including (with the exception of part of Lapland) the extreme N. W. portion of the Russian empire; length, 600 miles; average breadth, about 240 miles; area, 144,255 square miles; pop. 2,483,249; chiefly Finns and Lapps; capital, Helsingfors.

Finland, which is divided into 8 provinces, consists principally of a tableland from 400 to 600 feet above the level of the sea, and interspersed with hills of no great elevation. In the N., however, the Manselka Mountains have an average height of between 3,000 and 4,000 feet. The coasts are surrounded by a vast number of rocky islets, separated from the mainland and from each other by intricate and narrow channels, rendering the shores of the country easy of defense in case of hostile attack by sea. The chief natural feature of Finland is its myriads of lakes, which spread like a network over a large proportion of its surface. The greater number of these are in the S. and E.; and generally abound with islands. There are numerous rivers, but none of much importance.

The climate is rigorous. Even in the S. the winter lasts from 6 to 7 months, and in the N. from 8 to 9 months. Dense fogs are very frequent; heavy rains take place in autumn, and in May and June the thaws put a stop to nearly all traveling. In the N. the sun is absent during December and January; but during the short summer, while that luminary is almost perpetually above the horizon, the heat is often very great; and near Uleaborg, in about lat. 65°, corn is sown and reaped within 6 or 7 weeks. Crops are exposed to the double danger of being destroyed by sudden frosts, and by the ravages of a variety of caterpillar.

Rye, oats, and barley are grown. The most important products are, however, timber, deals, potash, pitch, tar, and resin; all of which articles are extensively exported. Next to agriculture, stock-breeding and fishing form the leading occupations of the inhabitants.

The Finns were pagans, living under their own independent kings, till the 12th century, about the middle of which the country was conquered by the Swedes, who introduced Christianity. The province of Wyborg was conquered and annexed to Russia by Peter the Great in 1721; the remainder of the country became part of the Russian dominions (also by conquest) in 1809. Owing to the evident determination of the Russian government to abolish the autonomy of Finland, and make the country a Russian province, the Finns are emigrating to America in large numbers. The country was visited in 1902–3 by a serious famine, which was greatly relieved by the generous contributions of readers of the Christian Herald.

Finland, Gulf of, one of the great arms of the Baltic Sea, extending E. and N. between lat. 58° 40′ and 60° 40′, and between lon. 23° and 30° 10′ E. It has a length of 260 miles, by a varying width of between 25 and 90 miles.

Finlay, George, an English historian; born in Faversham, Kent, England, Dec. 21, 1799. His "Greece under the Romans, B. C. 146 to A. D. 717" (1844) raised him at once to a place among the few foremost historians. He died in Athens, Greece, Jan. 26, 1875.

Finley, John, an American poet; born in Brownsburg, Va., Jan. 11, 1797. He died in Richmond, Ind., Dec. 23, 1866.

Finley, Martha, pseudonym Martha Farquharson, an American novelist; born in Chillicothe, O., April 26, 1828. She taught, wrote for the press; and wrote a number of novels.

Finnan, or **Findon,** a fishing village of Scotland, 6 miles S. of Aberdeen. It has been long celebrated for its preparation of smoked haddocks, known far and wide, as "Finnan haddocks."

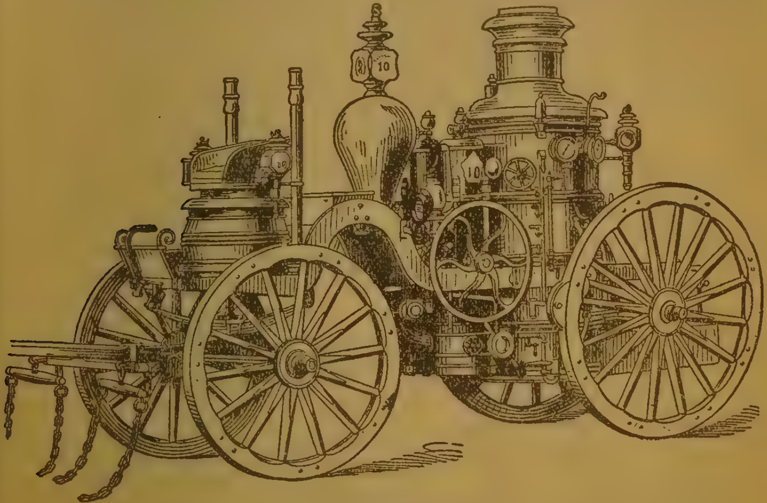
Finsotti, Joseph Maria, an American clergyman and author; born in Ferrara, Italy, in 1817. He studied theology in the Jesuit College, Rome, and in 1845 removed to the United States. He was ordained priest, and stationed at Alexandria, Va. In 1852 he left the Jesuit Society. His health having failed, he removed to Cincinnati, and afterward to Central City, Col. He died in Denver in 1879.

Fiord, an inlet of the sea, generally long, narrow, and deep; a term applied in Scandinavian countries to any bay, creek, or arm of the sea which extends inland, and sometimes used to express an inland lake or considerable sheet of water; as, Sogne Fiord.

Fir, in the narrower and stricter sense of the word, the name of a genus of trees having solitary leaves growing around the branches. The fir is thus distinguished from the pine, the leaves of which grow in twos, threes, fours, or fives; and from the cedar and the larch, both of which have the leaves fasciculated. The term fir, thus limited, is applied only to the different varieties of the silver fir and the spruce fir.

Firdausi, or **Firdusi,** a Persian poet; lived from about 935 to about 1020. His true name was Abul Kasim Mansur. He is the greatest of Persian epic poets.

Fire Alarm, an apparatus for communicating warning of a fire, as by telegraphic signal, etc. Also an automatic arrangement by which notice of fire is given.



STEAM FIRE ENGINE.

Firearm, a weapon which projects a missile by the explosive force of gunpowder or other similar explosive, that owes its expansion to ignition; as rifles, muskets, pistols, etc. The term is not now generally extended to cannon.

Fire Armor, a device to protect firemen and others from the effects of smoke, gas, etc.

Fireball, a ball filled with powder or other combustibles, intended to be thrown among enemies, and to injure by explosion, or to set fire to their works. Also a popular name applied to a certain class of meteors which exhibit themselves as globular masses of light moving with great velocity, and not infrequently passing unbroken across the sky until lost in the horizon.

Fire Balloon, a balloon whose ascesional power is derived from a body of heated air rising from a fire beneath the open mouth of the bag. Also a balloon sent up at night with fireworks, which ignite at a certain regulated height.

Fire Boat, a small steamboat equipped with apparatus for extinguishing fires that may occur on the wharves or among the shipping. Used in many large cities, they have proved of great service.

Fire Brick, a brick capable of sustaining without fusion, the extreme action of fire. They are used for lining furnaces, and for all kinds of brick-work exposed to intense heat which would melt common bricks.

Firedamp Indicator, an instrument founded on the laws of the diffusion of gases.

Fire Engine, a machine employed for throwing a jet of water for the purpose of extinguishing fires. This name was formerly applied to the steam engine. Machines for the extinguishing of fires were employed by the Romans, and are referred to by Pliny; but he gives no account of their construction. Apollodorus, architect to the Emperor Trajan, speaks of leathern bags with pipes attached, from which water was projected by squeezing the bags. Hero of Alexandria, in his treatise on pneumatics — written probably about 150 years before the Christian era — describes a machine which he calls "the siphons used in conflagrations." It consisted of two cylinders and pistons connected by a reciprocating beam, which raises and lowers the pistons alternately, and thus, with the aid of valves opening only toward the jet, projects the water from it, but not in a continuous stream, as the pressure ceases at each alternation of the stroke. The more recently constructed fire engines include contrivances for preventing the entrance of mud and gravel, and for ready access to the valves in case of their being out of order, while the cistern is dispensed with, a hose being carried directly to the water-supply. They are usually drawn by two horses, though smaller engines are made to be drawn by hand or by one horse, while steam-propelled engines are in use in some cities.

MODERN FIRE LADDER.

In the United States the use of fire engines dates from 1731. At the present time they are to be found in all the cities, towns, and larger villages of the Union, and American fire extinguishing methods have aroused admiration in Europe, where fire departments are following American examples.

Fire Escapes are of two distinct kinds — one for affording aid from outside, and another for enabling those within the house to effect their own escape. Of the latter the simplest is a cord firmly attached to the window sill of every sleeping apartment, and coiled in a suitable place. A pulley fixed to the window sill, over which runs a rope with a chair or simple board to sit on, is a well-known contrivance. Fire escapes, to be used from without, consist either of simple ladders kept at convenient stations, or a series of ladders that can be joined together; of poles with baskets attached; of ropes with weights at one end, that they may be thrown into windows; of combinations of ladders, ropes, bags, baskets, nets, etc. In most large American cities, fire escapes consisting of iron stairways or ladders are required by law to be constructed on all high buildings.

Firefly, a small beetle which emits a beautiful phosphoric light from the under surface of the terminal segments of the abdomen. In the United States during the summer months these little insects abound, and are observed to be particularly active and luminous after slight showers of rain, studding the trees and grass with their pale lights.

Fire Hose. In the United States cotton is woven into a tube by machinery constructed for the purpose. Two such tubes are fitted one within the other, and held together by a solution of india-rubber, which forms a water-tight layer. English hose is generally made of leather fastened by rivets.

Fire Island, the most W. end of a strip of the Great South Beach, Suffolk co., N. Y., 40 miles long, averaging one-half mile W., off Long Island, between Great South Bay and the Atlantic Ocean, and containing a lighthouse. The beach took its name from the fires built there as signals to vessels during the war with England in 1812.

Firelock, a musket or other gun, with a lock furnished with a flint and steel, by means of which fire is produced in order to discharge it.

Fire-making, the art of producing fire. Plutarch says that in his time there were fireless races of mankind. The oldest method known of making fire is the South Sea Island one by means of a stick and a groove. By a change in the way of working, this became the Fire Drill. There followed next, the method of striking fire by means of a flint, a piece of iron pyrites and tinder. This process was known to the ancients, which is the reason why they called one of the two minerals used pyrites — fire-stone. The Greeks knew how to concentrate the sun's rays by a burning glass, and the Romans effected the same result by concave mirrors. Fire has been obtained by the revolution of a windlass in the hole of an oaken post smeared with tar. The usual method, before the lucifer match, was to keep the hearth-fire alive all night, under the penalty, in winter, of a trip across the snow to the nearest neighbor's in the morning.

Fire Marshal, an officer in some of the larger American cities who has command of the fire department and who directs the work of extinguishing fires. He has large powers of discretion, and also police authority.

Fireproof, proof against fire; incombustible. Buildings are rendered fireproof by constructing them entirely of brick or stone, and using iron doors, lintels, etc., and stone stairs. Wood can be treated with silicate of soda, which, on the application of a strong heat, fuses into a kind of glass, forming a shield against fire. Cloth or wood impregnated with certain saline substances will not blaze. Modern sky-scrapers are of fire-proof construction.

Fireproof Wood in Ships. Wherever it is necessary to use wood in ships it should be rendered fireproof. This can be done by a simple process, which consists in withdrawing all sap and moisture from the lumber in a vacuum, and then filling the pores with phosphate of ammonia. This mineralized wood cannot be set on fire. Wood treated as above shown is employed exclusively in the following ships of the United States navy: The "Wilmington," "Annapolis," "Marietta," "Helena," "Nashville," "Wheeling," "Newport," and "Vicksburg." The speedy destruction of the Spanish cruisers in the fight off Santiago and the burning of a Japanese and five Chinese ships during the war between these countries, show the importance of using fireproof wood in the construction of naval vessels.

Fire Ship, a vessel filled with combustible matter to be sent against the shipping of an enemy lying at anchor in rivers or roadsteads, after having been set on fire in several places. They were frequently used during the wars of the 17th and 18th centuries.

Fire Worshipers, the Zoroastrians, called also Guebres. No prominent race now in India has become more rapidly modified by intercourse with Europeans.

Firmament, the word usually designates the expansive arch over our heads, in which all the various phenomena of the stars and planets appear to take place.

Firman, in Turkey, any decree issued by the Porte and authenticated by the Sultan's own cipher or signet.

First Fruit, the fruit or produce first matured or collected in any season; first profits of anything; first or earliest effects of anything in a good or bad sense. In ecclesiology, that portion of the fruits of the earth and other natural produce, which, by the usage of the Jews and other ancient nations, was offered to God.

Fischer, Sir Henry Charles, a German-English telegrapher; born in Munden, Hanover, in 1833. He was educated in Germany, and entered the Hanoverian government telegraph service in 1852; went to England in 1856; at the transfer of the telegraph to the State (1870), was deputed by the postmaster-general to organize the staff and other arrangements of the Central Telegraph Office, and made controller; he retired in 1898.

Fischer, Kuno, a German historian of philosophy; born in Sandewalde, Silesia, July 23, 1824. He was interdicted from teaching philosophy at Heidelberg in 1853; but after filling professorships in Berlin and Jena, he had the satisfaction of being called to the chair of philosophy at Heidelberg in 1872.

Fish, the name applied to a class of animals exclusively aquatic, and occupying the fourth and lowest station of the section Vertebrata.

Fish, Hamilton, an American diplomatist; born in New York city, Aug. 3, 1808; was graduated at Columbia College, and admitted to the bar in 1830. He was elected a congressman in 1842, and governor in 1848. In 1851 he was elected to the United States Senate, where he opposed the repeal of the Missouri Compromise and joined the Republican party on its foundation. He was Secretary of State under Grant from 1869 to 1877, signing, as one of the commissioners, the Washington Treaty of 1871, and carrying through the settlement of the "Alabama" question. Died in Garrison's, Putnam co., N. Y., Sept. 7, 1893.

Fish, Nicholas, an American military officer; born in New York city, Aug. 28, 1758, studied law; joined the Continental army and distinguished himself during the Revolutionary War. He was made adjutant-general of New York in 1786; supervisor of United States revenue in 1794, and president of the New York State Cincinnati Society in 1797. He died in New York city, June 20, 1833.

Fish Culture, or **Pisciculture,** the artificial propagation of fish to offset the destructive effect of fisheries. The art of fish fertilization is comparatively new. In the United States the art has made greater progress than in Europe. Dr. Garlick in 1865 began the propagation of brook trout, and New Hampshire imported salmon eggs from Canada to hatch in the waters of that State. Since then the various States have one by one taken up the art, till now over three-quarters of them have regularly appointed fish commissioners.

The United States Commission of Fish and Fisheries is placed in charge of a Commissioner who is required to be a person of scientific and practical acquaintance with the fish and fisheries of the sea, coast and inland waters. Reports are made annually to Congress. In 1900 the commission planted altogether 1,164,336,754 eggs and fish in waters of the United States. Of this number nearly one-fifth were shad, and one-fourth whitefish.

Fisher, Clara (Mrs. Clara Fisher Maeder), an American actress; born in London, England, July 14, 1811; made her first appearance on the stage in London when six years old. In 1834 she married James Gaspard Maeder, a well-known musician, and settled in Albany, N. Y. She, however, continued on the stage till 1889, when she retired. She died in Metuchen, N. J., Nov. 12, 1898.

Fisher, George Park, an American author and educator; born in Wrentham, Mass., Aug. 10, 1847; studied theology at the Yale Divinity School; at Andover, and in Germany, was Professor of Divinity in 1854–1861, and subsequently of Ecclesiastical History, at Yale.

Fisher's Hill, a lofty eminence, about 20 miles S. of Winchester, Va., between the Massanutten and North Mountains, and with its base washed by a branch of the Shenandoah. This place was the scene of a battle, Sept. 22, 1864, between a National force under General Sheridan, and one of Confederates commanded by General Early, in which the latter was defeated.

Fishery, the business or occupation of catching fish.

Fishway, a device to enable fish, especially salmon, to ascend a fall.

Fisk, Franklin W., an American educator; born in Hopkinton, Vt., in 1820; was graduated at Yale University in 1849; taught there awhile; then became Professor of Rhetoric in the Seminary of Beloit, Wis. He was called to the Chicago Theological Seminary when that school was founded in 1859. Subsequently he was president of the seminary till 1900 when he resigned. He died in Chicago, Ill., July 4, 1901.

Fisk University, a co-educational institution in Nashville, Tenn.; founded in 1866 under the auspices of the Congregational Church.

Fiske, Bradley Allen, an American naval officer; born in Lyons, N. Y., June 13, 1854; was appointed a cadet midshipman in the United States navy Sept. 24, 1870; became a lieutenant Jan. 26, 1887, and lieutenant-commander March 30, 1900. He invented a boat detaching and attaching apparatus for warships in 1877; the first electric ammunition used in the navy in 1888; electric gun training apparatus and electric steering gear the same year; range and position finders in 1889; improvements of the range finder and electric steering gear in 1895; and an electrical apparatus for transmitting the orders of a ship's commander from the deck bridge to the engine room in 1896; and has been attached to the Naval Bureau of Ordnance since April 20, 1895.

Fiske, John, an American historian; born in Hartford, Conn., March 30, 1842. He was graduated at Harvard College in 1863, and in 1865 took his degree in law, but never practised. He was for a while lecturer on philosophy at Harvard, and in 1872–1879 assistant librarian. He wrote "Outlines of Cosmic Philosophy," his principal work, in which he gives an exposition of the philosophy of natural evolution and various other books, mostly dealing with American history. Died in Cambridge, Mass., July 4, 1901.

Fissure, in ordinary language, a cleft; a narrow opening made by the parting or opening of any substance; a crack. In botany the opening of seed-vessels, anthers etc. In heraldry, the fourth part of the bend sinister. In geology, a crack in the strata, produced by volcanic or earthquake action, subsidence, or any other cause.

Fistula. In surgery, a long and sinuous ulcer, having a narrow opening, and sometimes leading to a large cavity, and which has no disposition to heal.

Fitch, Ashbel Parmalee, American statesman and financier; born Movers, Clinton co., N. Y., October 8, 1848; educated at Jena and Berlin; member of Congress from 1886 to 1893, and Comptroller of New York city from 1893 to 1897.

Fitch, John, an American inventor; born in East Windsor, Conn., Jan. 21, 1743; manufactured arms during the Revolutionary War. In 1786 he built a steamboat which could run 8 miles an hour. Two years later a company was organized in Philadelphia, which built a steampacket that ran on the Delaware river for about two years, when the company failed. He wrote a history of his work on the steamboat which he left in a sealed envelope directed to "My children and future generations." He died in Bardstown, Ky., July 2, 1798.

Fitch, William Clyde, an American playwright and author; born in New York, May 2, 1865. He was educated at Hartford, Conn., and Amherst College, Amherst, Mass. He has written a number of successful plays.

Fitger, Arthur, a German poet and painter; born in Delmenhorst, Oldenburg, Oct. 4, 1840. He wrote several successful dramas.

Fitts, James Franklin, an American journalist and novelist; born in Lockport, N. Y., in 1840. During the Civil War he distinguished himself on several occasions, and was rewarded with promotions. After the war he devoted himself to writing for newspapers, magazines, and syndicates. He died in Lockport, Jan. 11, 1890.

Fitzgerald, Edward Lord, an Irish patriot; born near Dublin, Ireland, in 1763. He was a son of the first Duke of Leinster. He distinguished himself for intrepidity as aide-de-camp to Lord Rawdon in the latter part of the American Revolutionary War, and was severely wounded in the battle of Eutaw Springs. On his return to Ireland, Fitzgerald was desirous of effecting a separation of that country from England, and induced the French Directory to furnish him with a fleet and troops. A landing was attempted on several occasions, but without success, owing to the vigilance of the English channel fleet; and Fitzgerald was seized, tried, and condemned to death. He died of his wounds before the time fixed for his execution, 1798.

Fitzgerald, Edward, an English poet; born in Bredfield House, near Suffolk, England, March 31, 1809. His father, John Purcell, assumed the name of Fitzgerald, which was his wife's family name. His writings are for the most part remodeled translations of poems in other languages; among them "The Rubaiyat of Omar Kahyyam" (1859), a translation that won for Fitzgerald great celebrity, although at first published anonymously. He died in Merton, Norfolk, England, June 14, 1883.

Fitzgerald, Percy Hetherington, an Irish novelist; born in Fane Valley, Louth, Ireland, in 1834. He studied at Trinity College, Dublin, and became a member of the bar; making excursions into literature.

Fitzgibbon, Mary Irene, an American philanthropist; born in London, England, May 12, 1823; removed to New York early in life. In 1869 Archbishop (later Cardinal) McCloskey requested her to organize a work for the care of the waifs of the diocese. She began this work with only $5, but soon raised enough money to provide a temporary home. In 1870, the legislature authorized the city to grant the asylum a site and to appropriate $100,000 toward a building, providing an equal amount should be raised by subscriptions. This amount was soon raised. At the time of Sister Irene's death, the buildings of the asylum covered an entire block and were valued at over $1,000,000. She died in New York city, Aug. 14, 1896.

Fitzpatrick, William John, an Irish biographer; born in Dublin, Ireland, Aug. 31, 1830. From the day of his graduation at the Catholic College in Clongowes Wood, he devoted himself to the study of Ireland's rights and wrongs, and of the actors in Irish history. He died in Dublin, Dec. 24, 1895.

Five Forks, a locality near Dinwiddie Court-house, Va. Here on April 1, 1865, a severe engagement was fought between the National troops and the Confederates, the former under the command of General Sheridan, and the latter under that of General Lee. After several hours' heavy fighting the Confederates retreated with a loss of a large number of killed and wounded, 5,000 prisoners, and several guns. The National loss was about 1,000 men, including General Winthrop, who was killed.

Five-Mile Act, an old English law, an Act, 17 Chas. II., c. 2, passed in 1665, which forbade non-conformist pastors who refused to take an oath of non-resistance to come within five miles of any corporation in which they had preached since the passing of the Act of Oblivion in 1660. The Toleration Act of 1689 swept it away.

Fives, an English game at ball, in which the ball is struck against a wall. It is played either in close or in open courts, of various shapes and proportions.

Fixed Star, in pyrotechnics, a composition introduced into a rocket case and emitting fire at five holes, to represent a star. The composition is niter, sulphur, gunpowder meal, and antimony.

In astronomy fixed stars are those which till lately were supposed absolutely to maintain their relative positions toward each other in the sky, and are still admitted to do so very nearly. They are contra-distinguished from planets or "wandering stars." They shine by their own light, and probably are suns each one surrounded by planets of its own.

Fixture, in law, a term applied to things of an accessory nature annexed to houses or lands, so as to become part of the realty. The annexation must be by the article being set into or united with the land, or with some substance previously connected therewith. Thus a shed built upon a frame not let into the earth, is not a fixture. Machines and other things erected for the purposes of trade are not fixtures, if they can be removed without material damage to the property. Fixtures may not be distrained upon.

Flag, an ensign or colors; a piece of cloth, either plain or colored, and having certain figures, lines or marks painted or worked on it; a banner indicating nationality, occupation, or intelligence. Flags of nationality are standards, ensigns, pennants (pendants), jacks. Flags of occupation indicate service, as war, merchant, dispatch, pilot, yacht-squadron, liners, etc. Flags of intelligence are of various colors and of three shapes: square, pointed, and burgee. They are used in various combinations to transmit messages according to a printed or secret code. The standard (military or naval) is a war flag. The ensign is national. The idea of standards originated with the Egyptians at an early age. When the 13 colonies began to feel the pressure of British rule they placed upon their banners a rattlesnake, cut in 13 pieces, representing the 13 colonies, with the motto: "Join or die." When these colonies became more united in their purpose of resistance to British tyranny, they placed upon their flag a well-formed rattlesnake in the attitude of about to strike, with the motto, "Don't tread on me."

The next form of the United States flag was our present standard, the Stars and Stripes. On June 14, 1777, the Continental Congress resolved that the flag of the United States be 13 stripes, alternate red and white and that the union be 13 white stars on a blue field, representing "a new constellation." On Jan. 13, 1794, by an act of Congress, the flag was altered to 15 red and white stripes, and 15 stars. On April 4, 1818, Congress again altered the flag by returning to the original 13 stripes, and 15 stars, as the adding of a new stripe for each additional State would soon make the flag too unwieldy. A new star is added to the flag on July 4 following the admission of each State into the Union. Although there is no historical evidence of the derivation of the American flag from the arms of the Washington family, the resemblance is too obvious to be ignored.

Flagellants, a Christian sect which arose in 1260 at Perugia, called by the French Perouse, and spread throughout and beyond Italy. Its adherents, who saw a plague raging, and moreover expected the world speedily to terminate, believed that they could propitiate the Divine Being by walking in procession with only a cloth tied round them, and flagellating their bare shoulders with whips which they carried. At first they were noted for sanctity, and made many converts even from the most abandoned classes, but doubtful characters beginning to join their ranks, they fell into disrepute, and were restrained from their processions by the civil and ecclesiastical authorities, then the sect gradually died away. The terror produced by the dreadful disease called the black death, which destroyed many millions of people in Europe between 1348 and 1351, produced a revival of the flagellation mania which spread over most of Europe and was attended by greater extravagances than before. In 1414 an effort was made in Thuringia to revive them anew, but the burning alive of their leader, Conrad Schmidt, and 90 of his followers in part thwarted the project, though even then the extirpation of the sect was found a work of extreme difficulty. The practices of the Flagellants have been occasionally witnessed within recent years in New Mexico.

Flageolet, in music, a small pipe with a mouth-piece inserted in a bulb (hence the derivation of the name from the same root from which the word flagon comes), producing a shrill sound, similar but much softer in quality than that produced from the flauto piccolo. It was formerly employed in the orchestra.

Flagg, George Whiting, an American artist; born in New Haven, Conn., June 26, 1816. He was elected a member of the National Academy of Design in 1843, and an academician in 1851. He died on Nantucket Island, Mass., Jan. 5, 1897.

Flagg, Wilson, an American naturalist; born in Beverly, Mass., Nov. 5, 1805. He died in North Cambridge, Mass., May 6, 1884.

Flamboyant, in architecture, a term applied to the decorated and very ornamental style of architecture of French invention and use. One of the most striking and universal features is the waving arrangements of the tracery of the windows, panels, etc. The foliage used for enrichments is well carved and has a playful and frequently good effect.

Flamborough Head, a bold promontory of England, on the Yorkshire coast, projecting a considerable distance into the sea. This is at once the most striking and most celebrated headland on the E. coast of Great Britain, rising 450 feet sheer above the sea, having on its summit a lighthouse, 214 feet high, showing a revolving light.

Flamen, in Roman antiquities, the name given to any Roman who was devoted to the service of one particular god. The most dignified were those of Jupiter, Mars, and Quirinus, and were called respectively Flamen Dialis, Flamen Martialis.

Flamingo, a genus of web-footed birds which may be regarded as in some respects intermediate between the storks and the ducks, their long legs and necks giving them a resemblance to the former, while their webbed feet connect them with the latter. There are nine species of true flamingoes. Their food appears to be mollusca, spawn, grass, water plants, insects, etc., which they fish up by means of their long neck.

They breed in companies in mud-flats or inundated marshes, raising up the mud into a small hillock, which is concave at the top so as to form a nest. In this hollow the female lays her eggs, and hatches them by sitting on them with her legs doubled up under her.

The young, which never exceed three in number, do not fly till they have nearly attained their full growth, though they can run very swiftly and swim with ease almost immediately after their exclusion from the shell. The common American species is of a deep red color, with black quills. It is peculiar to tropical America, migrating in summer to the Southern, and rarely to the Middle States.

Flammarion, Camille, a French astronomer, writer on descriptive astronomy, and "astronomical novelist"; born in Montigny-le-Roi, Haute Marne, France, Feb. 25, 1842. In 1901 he contributed many articles to the New York "Herald."

Flanders, the name of a very interesting and early civilized portion of Europe, forming two contiguous provinces of Belgium, termed East Flanders and West Flanders, respectively, Capital Ghent. West Flanders has a considerable coast-line; in the central part of which is the port of Ostend. The surface is generally level, excepting the dunes, or sand-hills, on the coast. The soil is fertile and agriculture good. Some of the earliest settlers of New York came from Flanders.

Flandrians, a subdivision of the Mennonite Anabaptist sect. They arose in the 16th century, and were rigid in their procedure. The Flandrians were called also Flemings.

Flandrin, Jean Hippolite, a French painter; born in Lyons, France, March 23, 1809. Among his chief works are the fine series of frescoes in the churches of St. Germain-des-Pres and St. Vincent de Paul, Paris, which are reckoned among the masterpieces of modern painting. He died in Rome, Italy, March 21, 1864.

Flash, Henry Lynden, an American author; born in Cincinnati, O., Jan. 20, 1835; was graduated at the Western Military Institute, Kentucky, in 1852; served during the Civil War as volunteer aide on the staffs of Generals Hardee and Wheeler. He was the author of "Poems," and of many popular ballads which appeared during the Civil War.

Flatfishes, the family containing the sole, the plaice, the turbot, the halibut, the brill, etc. They are compressed or flattened laterally, not vertically, as is often erroneously supposed.

Flathead, or **Salish, Indians,** in the State of Washington. They are so named on account of a practice formerly prevalent among them, of flattening the heads of their infants by artificial means. The custom, it is said, has been abandoned by this tribe, though it still exists among several neighboring tribes, to whom the name of Flathead is not generally given. The flattening of the head is accomplished by subjecting the skull of the infant to severe mechanical pressure during the first six or eight months of its life.

Flaubert, Gustav, a French novelist; born in Rouen, France, Dec. 12, 1821; died in Rouen, May 8, 1880.

Flax, a plant which has been cultivated from remote antiquity.

Common flax is cultivated principally for the fibers yielded by it, of which linen is made. The use of this article is so ancient that no tradition remains of its introduction. The mummies of Egypt are always enveloped with it; and its use among the ancient Jews is familiar from the Bible. The use of linen passed from Egypt to Greece and Italy. Besides forming agreeable and beautiful apparel, the rags are made into paper.

The seeds of the flax yield an oil well known in commerce under the name of linseed oil. The cakes of seed remaining after the oil is expressed are used for fattening cattle and sheep.

There are three varieties of flax; the first produces a tall and slender stem, with very few flowers, ripens late, and affords the longest and finest fibers; the second produces numerous flowers, and is the most proper for cultivation where the seed is the object, but its fibers are short and coarse; the third is the most common, and is intermediate between the other two.

Flaxman, John, an English sculptor and draughtsman; born in York, England, July 6, 1755. His father was a figure-molder. The monuments to Nelson, Howe, and Reynolds in St. Paul's are by his hand. One of his latest and finest productions is the "Shield of Achilles." He died in London, Dec. 7, 1826.

Flea. A wingless insect, probably related to flies; with saw-like, biting jaws (mandibles); with other mouth-appendages (labial palps) adapted for sucking; with legless, biting, maggot larvæ. It is remarkable for its agility, leaping a distance of 200 times its length, and its bite is very troublesome.

Fleece, Order of the Golden, a military order instituted by Philip the Good, Duke of Burgundy, in 1429, on the occasion of his marriage with the Portuguese princess, Isabella. The order now belongs to both Austria and Spain.

Fleming, Mrs. May Agnes (Early), a Canadian story-writer; born in New Brunswick in 1840; died in 1880.

Fleming, Paul, a German poet; born in Hartenstein, Saxony, Oct. 5, 1609. He was attache of an embassy to Russia and Persia, and his "German Poems," which appeared in 1642, were often republished. He died in Hamburg, April 2, 1640.

Flemish Brick, a sort of European brick used for paving. They are of a yellowish color, and harder than the ordinary bricks.

Flemish School, a school of painting highly recommended to the lovers of the art by the invention, or at least the first practice, of painting in oil. It has been generally attributed to John Van Eyck, in the beginning of the 15th century.

Fletcher, Julia Constance, pseudonym George Fleming, an American novelist; born in Rio Janeiro, Brazil, in 1858; daughter of James C. Fletcher, who was a missionary to Brazil and wrote "Brazil and the Brazilians." She resided for years in Italy and in London.

Fleur de lis, in botany, various species of the genus iris. In heraldry, the royal insignia of France. Its origin is disputed; by some it is supposed to represent a lily, by others the iron head of some weapon.

Fleurus, a town of Belgium, in the province of Hainault, near the Sambre, 7 miles N. E. of Charleroi. This place is noted for four important battles having taken place in its vicinity. The fourth, more commonly known as the battle of Ligny, took place on June 16, 1815. On that day Blucher was defeated by Napoleon.

Fleury, Andre, Hercule de, a cardinal and prime minister of France under Louis XV.; born in Lodeve, Languedoc, France, in 1653. In 1726 he was made cardinal, placed at the head of the ministry, and from his 73d to his 90th year he administered the affairs of his country with great success. He died in 1743.

Flint, a crypto-crystalline variety of quartz. It is usually gray, smoke-brown, or brownish black. If derived, as it mostly is, from the cretaceous formation, the white of the chalk is still seen on its external surface. It is very hard, strikes fire with steel and was formerly used for arrow heads, etc.

Flint, Austin, an American physician; born in Petersham, Mass.; Oct. 30, 1812; was graduated at the medical department of Harvard College in 1833. Professor of Pathology in the Long Island College Hospital in 1861-1868; president of the New York Academy of Medicine in 1872-1875, and of the American Medical Association in 1884; delegate to the International Medical Congress in Philadelphia in 1876, etc. He was the author of numerous text-books, clinical reports and medical papers. He died in New York city, March 13, 1886.

Flint, Timothy, an American author; born in North Reading, Mass., July 11, 1780. He was a Congregational minister during 1812-1814; subsequently he devoted himself to editorial work, descriptive writing, and fiction. He died in Salem, Mass., Aug. 16, 1840.

Flint, Weston, an American librarian; born in Pike, N. Y., July 4, 1835; was graduated at Union College in 1860, and at the Law Department of Columbia University in 1877; United States consul to China in 1871-1874; librarian of the Scientific Library, United States Patent Office, in 1877-1887; and was appointed librarian and secretary of the board of trustees of the Public Library in Washington in 1898.

Flint Glass, a species of glass made of white sand, 52; carbonate of potash, 14; oxide of lead, 33; alumina, 1; with metallic additions to neutralize color. Pure white sand free from oxide of iron is required for flint glass, as iron imparts a green color.

Flint Implements, a generic term used for any implements of flint obtained from Pleistocene or more recent deposits, each being afterward named more specifically as its exact nature becomes understood. Evans divides the implements into three classes — spear heads, oval or almond-shaped flint implements, and flint flakes. They have been found in various parts of the world, and do not always indicate extreme antiquity. Obsidian, a very hard flint, was used by the Aztecs in edged instruments at the time of the Spanish conquest.

Flintlock, the old-fashioned lock for firearms, in which the cock held a piece of flint, and came glancing down upon the steel cap of the pan which contained the priming. Flintlocks were invented early in the 17th century.

Floating Battery, a vessel strengthened so as to be shot-proof, or as nearly so as possible, and intended for operating in comparatively smooth water, for defending harbors or attacking fortifications.

Floating Breakwater, in hydraulic engineering, a contrivance contrivance consisting of a series of square frames of timber, connected by mooring chains or cables, attached to anchors or blocks of stone, in such a manner as to form a basin, within which vessels riding at anchor may be protected from the violence of the waves.

Floating Bridge, a bridge composed of rafts or timber, with a plank floor, resting wholly on the water.

Floating Islands, Gardens, and **Houses,** gardens and islands, formed of patches of wood and weeds, covered with grass, flowers, and other vegetable productions, supported on the surface of the water. In the United States, on the Mississippi, and in India on the Ganges, such islands, detached from the banks by the force of the currents, are often seen carried down to the sea, with tall trees standing erect on them. In Northern India, and on the borders of Tibet, and Persia, floating gardens are often erected by the natives, for the purpose of raising melons, cucumbers, and other similar vegetables and plants, which require a very aqueous soil for their cultivation. There is a notable floating island in Scott's Pond, Rhode Island.

Flodden, a village of England, Northumberland county, near the Scottish border, 5 miles S. E. of Coldstream; memorable as being the scene of the battle of Flodden Field, one of the most sanguinary conflicts recorded in British history. James IV., King of Scotland, having invaded England with a large force, was encountered here, Sept. 9, 1513, by an English army under the Earl of Surrey. James was killed and his army totally defeated. The loss on the part of the Scots was extremely great. Besides the king himself, no fewer than 12 earls, 13 barons, and 5 eldest sons of peers, with a vast number of knights and persons of distinction, and probably about 10,000 common soldiers, were left dead on the field. The

English loss was about 7,000. This is by far the most calamitous defeat recorded in Scottish annals.

Flood, a sudden and unusual overflow of water, caused by excessive rains, giving rise to an overflow of the rivers; by the bursting of the banks of rivers, lakes, and reservoirs; by the sudden melting of ice and snow; and by irruptions of the sea, produced by high tides, wind storms driving the sea water inland, earthquakes, volcanic outbreaks, and the bursting of sea banks.

Floquet, Charles Thomas, a French statesman; born in St. Jean de Luz in 1828; died in Paris, Jan. 18, 1896.

Flora, in Roman mythology, the goddess of flowers and gardens. She had especially to do with vines, olives, all kinds of fruit trees, and honey-bearing plants. In botany, the whole vegetation of a country or geographical period, as the American flora, meaning all the wild plants now occurring in this country; the Eocene flora, signifying all the plants found fossil in the Eocene.

Florence, a famous walled city of Central Italy; on both sides of the Arno, 187 miles N. W. of Rome. It stands in a richly wooded, well-cultivated, and beautiful valley, encircled by the Apennines. The Arno intersects it from S. E. to N. W., the communication between the opposite sides of the river being maintained by means of seven bridges. Florence contains a great number of magnificent edifices and squares, generally adorned with statues, columns, or fountains; there are no fewer than 170 churches, 89 convents, 2 royal, and many other palaces, 12 hospitals, and 8 theaters, great and small.

The duomo, or cathedral, a vast edifice, coated with marble, about 500 feet in length, and 384 feet in height to the top of the cross, stands in a spacious square. The church of Santa Croce, called the Pantheon of Florence, is interesting from its containing the remains and tombs of four of the greatest men of modern Italy, or indeed of modern times — Michael Angelo, Galileo, Machiavelli, and Alfieri. Among the palaces are the Palazzo Vecchio, or Old Palace, inhabited by the Medici when citizens of Florence, which was begun in 1298, and finished in 1550. Adjoining it is the Piazza del Palazzo Vecchio, a square containing a fine collection of statues, and a noble arcade, the Loggia di Lanzi, under the porticoes of which are magnificent groups of sculpture. But the crowning glory of Florence is its Grand Gallery, occupying the upper floor of the Ufizi, a building erected after a design of Vasari, by Cosmo I., consisting of two parallel corridors or galleries, each 448 feet in length, and 72 feet apart, united at one end by a third corridor. This contains some masterpieces of statuary, as the world-renowned "Venus de Medici," "The Knife-Grinder," the "Fawn," "Niobe and her Children," etc. The collection of pictures comprises superb examples of all the best schools, and is said to surpass even that of the Vatican. A splendid apartment, known as the Tribuna, contains the rarest treasures of the collection, and is in itself a wonder of art, with its cupola inlaid with mother of pearl, and its rich marble pavement. Florence is subject to fogs in the winter; but in spring and autumn it is a delightful residence, well provided with everything that can gratify the man of taste and science, or the voluptuary. Florence has produced more celebrated men than any other place in Italy, or, perhaps, of Europe; among others may be specified Dante, Petrarch, Boccaccio, Villani, Cosmo and Lorenzo de Medici; Galileo, Michael Angelo, Leonardo da Vinci, Benvenuto Cellini, Alberti, Lapo Brunelleschi, Giotto, Andrea del Sarto, Machiavelli; Popes Leo X. and XI., Clement VII., VIII., and XII. The origin of this city is not clearly ascertained; but it owed its first distinction to Sylla, who planted in it a Roman colony. In the reign of Tiberius it was distinguished by its writers and orators. In 541 it was almost wholly destroyed by Totila, King of the Goths. About 250 years afterward it was restored by Charlemagne. It then became the chief city of a famous republic; and was for a lengthened period in Italy what Athens had been in Greece in the days of Xenophon and Thucydides. At length, in 1537, the Medici, from being the first of her citizens, became sovereign dukes of Florence. The city afterward became the capital of the former grand-duchy of Tuscany till 1860, when it was annexed to the new kingdom of Italy, and in 1865 the seat of government was transferred thither from Turin. Pop. (1901) 204,950.

Florentine Fresco, a kind of painting, first practised at Florence during the flourishing period of Italian art, for decorating walls.

Florentine School, a school of painting remarkable for greatness; for attitudes seemingly in motion; for a certain dark severity; for an expression of strength by which grace is perhaps excluded; and for a character of design approaching to the gigantic.

Florida, a State in the South Atlantic division of the North American Union, bounded by Alabama, Georgia, the Atlantic Ocean, Gulf of Mexico, and the Straits of Florida; area 58,680 square miles; admitted to the Union in 1845; number of counties, 45. Pop. (1890) 391,422; (1900) 528,542; capital, Tallahassee.

The surface of the State is very low and flat, gradually rising from a few feet above sea-level along the coast to a central ridge with an altitude of about 300 feet. The flat lands extending along the coasts consist of open grass-grown savannahs, cypress swamps, pine forests, and "cabbage hummocks," so called from the extensive growth of the cabbage palms. The W. part of the State, excepting on the coast, is quite hilly. The S. part of the peninsula is built up of successive coral dikes; the upper part being occupied by Lake Okeechobee, whose shallow waters gradually merge into the Everglades, an extensive swamp covering the entire lower part of the State. The Everglades are penetrated in all directions by a network of small, shallow streams, and at short intervals over the entire area are found wooded islands covered with semi-tropical vegetation. The Everglades are separated from the Gulf by extensive cypress swamps, the forests extending down the W. coast, narrowing out around the cape, and extending up along the Atlantic coast. Many of the Florida swamps are so densely overgrown with vegetation that they have been explored but little and are considered impassable. Florida is noted for the number, size, and clearness of her springs, the most famous being the Silver Spring near Ocala in Marion county, with an estimated output of 300,000,000 gallons daily.

The soil is mostly sandy, but supports vegetation in great luxuriance. The surface soil, depending on the character of the underlying rock, is rich in phosphates, and these, together with decomposed vegetable matter, produce a very rich soil. In the N. and middle portions of the State, the oak, hickory, and pine grow extensively, while the long-leaved pine, pitch-pine, and cypress cover the S. portions.

Florida exhibits the vegetable productions of both temperate and semi-tropical nature. In the N. the products include peaches, pears, and cotton, while the middle and S. counties produce the finest oranges, pineapples, mangoes, cocoa palms, guavas, and almost all tropical fruits.

The principal manufactures are naval stores, cotton-seed oil, cigars, lead pencils, refined sugar, flour, salt by evaporation, palmetto hats, braids, and wooden boxes. Lumbering is a leading industry; fishing, sponge and coral gathering afford occupations for many. Jacksonville has many canning establishments and Key West and Tampa are noted for their fine cigars.

Florida was discovered by Juan Ponce de Leon, March 27, 1513, on Easter Sunday, after which the peninsula was named. He and his successors explored a large part of Florida in search of gold and "the fountain of perpetual youth." He was killed in a fight with the natives in 1521. In 1539 a force of 600 under Fernando De Soto landed at Tampa Bay and moving to the N. and W., overcoming the natives by treachery and violence, passed beyond the present limits of Florida. A settlement of French Huguenots was attempted in 1564, but two years later was exterminated by the Spanish. From this time the Spanish were in absolute control, and settlements were made at Pensacola and elsewhere along the coast. In 1687 the first large consignment of negro slaves was brought to Florida. In 1814 it was captured by the United States forces under Andrew Jackson. Then followed a long series of wars with the natives. the whole of Florida being ceded to the United States by Spain in 1819. In 1822 Florida was organized as a Territory of the United States. From 1835 to 1842 the Seminole Indians were in active hostility and on their final surrender they were removed to a special reservation. Florida was admitted to the Union as a State in 1845. At the outbreak of the Civil War the principal government posts were seized by the State forces. Fort Pickens, however, was held by a Union garrison, and after being reënforced was used as the base of operations in the vicinity. Jacksonville was several times occupied by the contending forces, and many minor engagements took place along the coast. Florida was readmitted to the Union on July 4, 1868.

Florida Keys, or **Reefs,** in Florida, a chain of small islands, keys or reefs, and sandbanks, extending S. W. from Cape Florida, about 220 miles. They are very considerable in number, but only a few are of any importance. Among these may be mentioned Key West, on which the city of Key West is built.

Florin, a gold coin formerly used in England, but long since extinct. Also the name of a silver coin current in several countries.

Florio, John, an English lexicographer, and the translator of Montaigne; born in London, England, about 1553; died in Fulham in 1625.

Floriopondio, a very poisonous plant of the nightshade order. The ancient Peruvians made an intoxicating beverage from its seeds, which, however, taken in excess, produces furious delirium. The priests of an ancient South American Temple of the Sun used it to produce oracular inspiration, and the Arabs of Central Africa smoke it as a narcotic and for the relief of asthma and influenza.

Floris, Francis, a Flemish historical painter, surnamed the "Flemish Raphael"; born in Antwerp about 1520; died in Antwerp, Oct. 1, 1570.

Floss Silk, the portions of raveled silk broken off in reeling the silk from the cocoons, carded and spun into a soft coarse yarn, and used for common fabrics, embroidery, etc.

Flotow, Friedrich Adolphus von, German composer; born in Teutendorf, Mecklenburg-Schwerin, Germany, April 26, 1812. He died in Darmstadt, Germany, Jan. 23, 1883.

Flotsam, Jetsam, and **Ligan,** in law: Flotsam, or floatsam, is derelict or shipwrecked goods floating on the sea; jetsam, goods thrown overboard which sink and remain under water; and ligan, goods sunk with a wreck or attached to a buoy, as a mark of ownership.

Flounder, one of the most common of the flat fishes, and found along the shores of almost all countries. The body is extremely flattened at the sides.

Flour, the finely-ground meal of wheat, and of any other corn or cereal which has been reduced to powder in a mill. The component parts of flour are starch, gluten, sugar, gum, bran, and water, the prime element being starch.

Flourens, Marie Jean Pierre, a French physiologist; born in Maureilhan, Herault, France, April 15, 1794. In 1840 he was elected member of the French Academy; in 1846 was made a peer of France, and in 1855 professor in the College of France. He was promoted grand officer of the Legion of Honor, April 24, 1845, and made member of the municipal Council of Paris in 1864. He died in Montgeron, near Paris, Dec. 6, 1867.

Flower, that part of a plant which is destined to produce the seed.

Flower, Roswell Pettibone, an American financier; born in Jefferson Co., N. Y., Aug. 7, 1835. In 1881 he was elected to Congress, and in 1886 was appointed president of the Subway Commission. He was reëlected to Congress in 1888 and 1890, and in 1891 was elected governor of New York. From the close of his term till his death he applied himself to the interests of his large banking house and to a systematic course of philanthropy. He died in Eastport, Long Island, N. Y., May 12, 1899.

Flower Month, in general any month in any country in which flowers are springing most abundantly; in the United States, June is specially the month of flowers.

Flowing Sheets, the position of the sheets, or lower corners of the principal sails, when they are loosened to the wind, so as to receive it into their cavities, in a direction more nearly perpendicular than when they are close-hauled, though more obliquely than when the vessel is sailing before the wind.

Flowers, Artificial, imitations of flowers, made of various materials. These are not a modern invention. Among the ancients the floral wreaths made by the Egyptians enjoyed as great a reputation as at the present day do the products of American art.

The first artificial flowers made in modern times in civilized countries were manufactured out of many colored ribbons which were twisted together and attached to small pieces of wire. In course of time feathers were substituted for ribbons, a material much more elegant than that previously in use, but one to which it was not so easy to give the requisite shades of color. In former times in the height of the fashionable rage for porcelain, flowers of all kinds were made of that substance and the odor of the real flowers was imitated by means of perfumes.

Flowers, Colors of. The colors of flowers have been arranged in two series, the blue and the yellow, in both of which red and white are found, green being produced by a mixture of the two. It has been estimated that in an average collection of 1,000 plants about 284 have white flowers, 226 yellow, 220 red, 141 blue, 73 violet, 36 green, 12 orange, 4 brown, and 2 black. White flowers are more generally odoriferous than those of other colors, and their odors are almost always agreeable. Red flowers, though less numerous than yellow ones, are more often sweet-smelling.

Floyd, John Buchanan, an American statesman; born in Blacksburg, Va., June 1, 1807. He served in the Virginia Legislature several terms; and was governor of the State in 1850–1853. In 1857 President Buchanan appointed him Secretary of War. While in the cabinet, he was detected in the act of stripping the Northern arsenals of arms and ammunition, and indicted by the grand jury of the District of Columbia as being privy to the abstracting of $870,000 in bonds from the Department of the Interior. He fled, however, to Virginia, where, at the close of 1860, he was commissioned a general in the Confederate army. In that capacity he was driven from West Virginia by General Rosecrans. The night before the surrender of Fort Donelson he stole away in the darkness, throwing the responsibility of surrendering on a subordinate officer, and, being censured by the Confederate government, never afterward served in the army. He died near Abingdon, Va., Aug. 26, 1863.

Floyd, William, an American statesman; born in Brookhaven, Suffolk co., N. Y., Dec. 17, 1734. In 1775 he was appointed a delegate to the first Continental Congress, and continued by successive reappointments a member of every Continental Congress up to 1782 inclusive. From 1777 to 1788 he also was a State senator under the first constitution of New York, and in the presidential elections of 1792, 1800, and 1804, was a presidential elector. He died in Weston, Oneida co., N. Y., Aug. 4, 1821.

Flügel, Johann Gottfried, a German lexicographer; born in Barby on the Elbe, Nov. 22, 1788. He spent many years in the United States in business, diplomatic, and official occupations. He died in Leipsic, June 24, 1855.

Fluid, having the parts easily separable; consisting of particles which move and change their relative positions very readily; capable of flowing; liquid; gaseous. The fundamental property of fluids, viewed as forces, in physics, is their equality of pressure in all directions. The term includes both liquids and gases.

Flute, in music, a popular instrument, the use of which, under various forms, may be traced to the most remote ages. Of its origin no direct account can be given. By the ancient poets its invention was ascribed to gods and goddesses. In its primitive state the flute was played like the modern flageolet, with a mouth-piece at the upper end. In this form, with slight alterations, it continued until the beginning of the 18th century, when it was gradually superseded by the flauto traverso, or transverse flute, so called from its being blown at the side, and consequently held in a horizontal position. Later, a movable head-joint was invented, its length was increased, and more keys added, some flutes at the present time having more than a dozen keys, and few less than six. In December, 1832, a flute of an entirely new construction was invented by Mr. Bœhm, of Munich, which has since been universally adopted.

Flute Organ, an organ in which the sound is produced by the action of wind on a cutting edge, in contra-distinction to the reed organ, in which the sound is produced by a vibrating tongue of metal. It is also called the mouth organ.

Fluxion, in medicine, an unnatural flow or determination of blood or other humor toward any organ; a catarrh.

Fly, an insect, characterized as possessing a pair of veined and membranous wings, with two movable bodies called balancers placed a little behind them. The sucker performs the part of a lancet, and pierces the envelope of vegetable or animal fluids, in order to allow of the fluid itself being transmitted up into the mouth of the insect. The antennæ are united in front, and are approximated at the base. The legs of this class of insects are long and slender; and the feet it is well known are furnished with skinny palms, to enable them to stick on glass and other smooth bodies by means of the pressure of the atmosphere.

Fly Catchers, an extensive family of birds, represented in North America by about 30 species. As their name implies, the fly catchers prey on insects, which they seize in mid-air. They have the beak horizontally depressed, and armed with bristles at its base, with the point more or less decurved and emarginated. The value of the insectivorous family of birds to man is incalculable. One of the best types of fly catchers is that presented by the tyrant fly catcher, king bird or bee martin.

Flying, the power of locomotion through the air possessed by various animals in different degrees. Birds, bats, and insects can raise themselves into the air and sustain themselves there at will. Squirrels, phalangers, some lizards, one of the tree frogs, and flying fish can move through the air in one direction for a short time.

Flying Dragon, a lizard of the sub-family of acrodonts. It is distinguished from other reptiles of this order by a membrane extending horizontally from its sides, and supported by six false ribs. This wing-like formation is not used in actual flying, but acts as a parachute to support the animal when leaping from branch to branch. Its total length is about 9 inches.

Flying Dutchman, a phantom Dutch ship supposed to be encountered off the Cape of Good Hope. The origin of the myth is doubtful.

Flying Fish, the name given to more than one fish which, having extended fins, leaps from the water, and after a more or less lengthened flight, drops into it again. The fins seem to act as parachutes rather than as wings.

Flying Frog, a frog having large webbed feet with adhesive disks.

Flying Lemur, called also colugo, an animal closely allied to the bats, which possesses the power of flying or leaping considerable distances by means of a membrane connecting its limbs with each other. The flying lemur differs from the bats in many respects, not the least important deviation of which is the absence of opposable thumbs on all the feet, which are composed of five fingers united by a membrane. Notwithstanding this, it certainly bears in its appearance and habits a remarkable similarity to the flying fox.

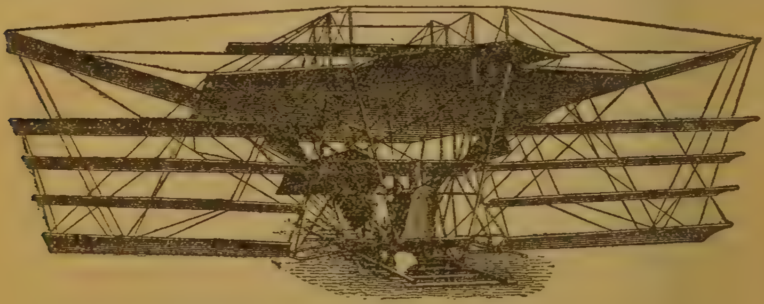
Flying Machine, a device for enabling man to navigate the air. The feat of flying has been often attempted; even among the ancients it was tried, and we are informed, succeeded to some slight extent.

The most notable modern experiments with a view to attaining this end have been conducted by Hiram Maxim, of England, and Prof. Samuel P. Langley, of Washington, D. C.; the former constructing his machine on the plane system, and the latter designing his somewhat in the form of a fish. The flying machine proper is heavier than air, depending on the motions of mechanically propelled wings for its support. But the more usual and hitherto most successful type is the manageable balloon. In such a one Santos-Dumont in September, 1901, succeeded in winning the prize of $20,000 offered to the aeronaut who should first (under given conditions) circle the Eiffel tower, in Paris. An experiment with Professor Langley's machine, at Washington, October, 1903, proved an utter failure.

Flying Squid, in zoölogy, an appellation given by sailors to certain mollusks which can leap out of the water so high as often to fall on the decks of vessels. They are used as bait in the Newfoundland cod fishery, and are the principal food of the dolphins and cachalots, as well as of the albatross and the larger petrels.

Focus, in ordinary language, any place from which an influence emanates, or where that influence exists in very concentrated form. In optics, a point at which the rays of light refracted from a convex lens, or reflected from a concave mirror, are most concentrated; a point in which such rays meet or tend to meet if produced either backward or forward.

Fog, a very thick mist; small hollow vesicles of water suspended in the air, but so low as to be but a short distance from the earth in place of rising high above it and becoming so illuminated by the sun as to constitute clouds of varied hue. Fogs often arise when the air above warm, moist soil is colder than the soil itself. The hot vapors from the ground are then condensed by coming in contact with the colder air above.



MAXIM'S FLYING MACHINE.

Flying Squirrel, a name given to such squirrels as have the skin of the sides very much extended between the fore and hind legs, so as, to a certain extent, to sustain the animal in the air when taking long leaps.

Fly Wheel, a heavy wheel attached to machinery to equalize the movement. By its inertia it opposes any sudden acceleration of speed, and by its momentum it prevents sudden diminution of speed; in the latter case it acts as a store of power to continue the movement when the motor temporarily flags, or in passing dead centers when the motor is inoperative. Fly wheels are also used to accumulate power.

Fo, the name given by the Chinese to Buddha.

Fog Alarm, an audible signal, warning vessels from shoals or other dangerous places. They consist of bells, whistles, and trumpets, and they are sounded by the current, by the ebbing and flowing tide, by the swaying of the waves, by the wind, by bellows, by clockwork impelled by weight or spring.

Foglar, Ludwig, an Austrian poet; born in Vienna, Dec. 24, 1819; died in Kammer, Aug. 15, 1889.

Fogo, Fuego, or **St. Philip,** one of the Cape Verde islands, in the Atlantic Ocean, and the highest of the group, being 9,760 feet above sea-level.

Fohi, the first Chinese emperor and legislator. He is said to have founded this kingdom 2,207 years B. C. Nothing certain is known of his reign; but there are attributed to him the institution of marriage, the invention of fishing, hunting, music, and writing. He acknowledged and worshiped a supreme deity. He is supposed to be the Noah of the Bible.

Foil, in fencing, a rod of steel, representing a sword, with a handle or hilt at one end, and a leather button at the other to prevent accidents. Foils measure from 31 to 38 inches long.

Foil, a leaf or thin sheet of metal placed beneath transparent jewels to heighten their color and improve their brilliancy; also applied to those sheets of tin amalgam placed behind mirrors to make them reflect perfect images.

Foix, Gaston de, nephew of Louis II. of France; born in 1489. He had the command of the army of Italy, and on account of the daring exploits was denominated the "Thunderbolt of Italy." After performing prodigies of valor he was killed at the battle of Ravenna, April 11, 1512.

Foix, Gaston III., Count de, and Viscount de Bearn, a French military officer; born in 1331; acquired the surname of Phœbus. He made war on the Count of Armagnac and took him prisoner; was for a short time governor of Languedoc; and in 1390 magnificently entertained Charles VI. at his chateau of Mazeres. He wrote a book on the pleasures of the chase, of which several editions were published. He died in 1391.

Folcland, or **Folkland,** the land of the people, that portion of Anglo-Saxon England which was retained on behalf of the community. It might be occupied in common or possessed in severalty, but could not become allodial estate or absolute private property except with the consent of the Witan or highest council in the land. From time to time large grants were made both to individuals and to communities; and land thus cut off from folcland was called bocland or "bookland." Ultimately the king practically acquired the disposal of it, and the remnant of folcland became crown lands.

Folcmote, in Anglo-Saxon Enland, an assembly of the people to consult respecting public affairs.

Foley, John Henry, an Irish sculptor; born in Dublin, Ireland, May 24, 1818. The most popular of his works are a statue of Seldon placed in the new palace of Westminster in 1855, near that of Hampden, considered his masterpiece. He died in Hampstead, near London, England, Aug. 27, 1874.

Folger, Charles James, an American jurist; born in Nantucket, Mass., April 16, 1818, and graduated at Hobart College in 1836. He was secretary of the United States Treasury in 1881–1884. In November, 1882, he was the Republican candidate for governor of New York, but was defeated by Grover Cleveland. He died in Geneva, N. Y., Sept. 4, 1884.

Folio, in printing: (1) The running number of the pages of a book. (2) A sheet of paper once folded. (3) A book of the largest size, whose sheets are folded but once, four pages to the sheet; hence it is used generally for any large volume or work. In bookkeeping a page or opening in an account book. In law, a certain number of words in legal documents. The number varies in the States; thus in some of them, as in England, in law documents, conveyances, deeds, etc., the folio is 72 words; in chancery and parliamentary proceedings 90 words. In New York and other States 100 words constitute a folio.

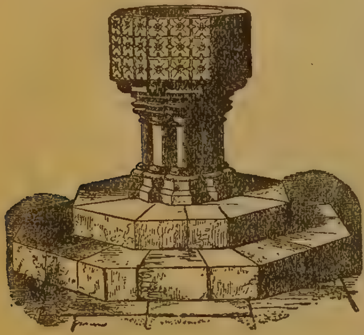
Folklore, the science which embraces all that relates to ancient observances and customs, to the notions, beliefs, traditions, supersitions, and prejudices of the common people.

The American Folklore Society was instituted at Cambridge, Mass., early in 1888: (1) For the collection of the fast-vanishing remains of folklore in America, viz.: (a) Relics of old English folklore (ballads, tales, superstitions, dialect, etc.); (b) lore of negroes in the Southern States of the Union; (c) lore of the Indian tribes of North America (myths, tales, etc.); (d) lore of French Canada, Mexico, etc. (2) For the study of the general subject, and publication of the results of special studies in this department. Already its journal has amply justified its existence by a series of articles of striking originality and value. Societies have been formed in other lands.

Follen, August, a German poet; born in Giessen, Germany, Jan. 21, 1794. He became intensely popular as the author of "Sons of Fatherland," a patriotic hymn; and numerous translations and poetic appeals to the instinct of liberty. He died in Bern, Switzerland, Dec. 26, 1855.

Follen, Eliza Lee (Cabot), an American author; born in Boston, Mass., Aug. 15, 1787. She died in Brookline, Mass., Jan. 26, 1860.

Font, the vessel which contains the water for the purpose of baptism. Until the Reformation, and occasionally after, dipping was practised in England. Pouring or sprinkling was not unusual previous to the Reformation; for as early as the year 754, pouring, in cases of necessity, was declared by Pope Stephen III. to be lawful; and in the year 1311, the Council of Ravenna declared dipping or sprinkling indifferent; yet dipping appears to have been in England the more usual mode. Fonts were required to be covered and locked; originally their covers were simply flat, movable lids, but they were subsequently very highly ornamented, assuming the form of spires, and enriched with various decorations in carved wood, taking the form of pinnacles, buttresses, etc.



BAPTISMAL FONT.

Fontainebleau, a town of France, department of Seine-et-Marne, near the Seine, in the forest of the same name, 32 miles S. S. E. of Paris. Manufactures porcelain. Fontainebleau owes its celebrity, and indeed origin, to its palace, or chateau, a favorite residence of the French monarchs. This is a vast and superb pile, in fact, rather a collection of palaces of different architectural periods than a single edifice. Saracenic, Tuscan, and Greek orders are intermixed and interspersed with that of the Renaissance, and with the most bizarre and dissimilar ornamentation; yet, on the whole, the structure has a striking air of grandeur and majesty. It is surrounded by magnificent gardens, and lies in the forest of Fontainebleau, a finely-wooded tract of 42,500 acres, intersected by the Seine, and presenting a very varied and picturesque surface. The chateau of Fontainebleau has been the scene of many historical events. It was here that Louis XIV. signed the Revocation of the Edict of Nantes, in 1685; and it is intimately connected with the history of Napoleon, who made it his favorite residence. He signed his abdication in the palace, in 1814. Under Napoleon III. the palace was still more enlarged and embellished, and became the scene of luxurious autumnal fetes, rivaling those of the days of Louis XIV. The forest of Fontainebleau became famous during the 19th century as the resort of many famous French painters of the modern school.

Fontana, Domenico, an Italian architect; born in Mili, Italy, in 1543. Sixtus V. wished to remove the great obelisk now in front of St. Peter's church, which was then nearly buried under the rubbish, to the middle of the square. Fontana happily executed this gigantic operation in 1586. Among other buildings erected by Fontana by the command of Sixtus V., the library of the Vatican and the aqueduct deserve particular mention. Having been accused of converting to his private use the money received for public purposes, he was deprived of his office by the Pope, but immediately received the offer of the post of architect and chief engineer of the King of the Two Sicilies, and in 1592 went to Naples. He there constructed several canals to prevent inundations, a new road along the bay, and the royal palace in the capital. Fontana died in Naples in 1607.

Fontana, Ferdinand, an Italian poet; born in Milan, Italy, Jan. 30, 1850. He made his mark early in journalism, and wrote some good librettos.

Fontane, Theodor, a German author; born in Neuruppin, Prussia, Dec. 30, 1819; died in Berlin, Sept. 21, 1898.

Fontanes, Marquis Louis de, a French statesman; born in Niort, France, March 6, 1757. Proscribed by the Revolution for editing papers opposed to the Terror, he fled to England. Later he attained high office under Napoleon and the restored Bourbons; died in Paris, March 17, 1821.

Fontenoy, Battle of, one of the most famous battles in the War of the Austrian Succession. It was fought at a small village of the same name, in Western Belgium. Here, May 11, 1745, the French under Marshal Saxe defeated the Allies under the Duke of Cumberland, with very heavy loss on both sides. Irish exiles in the French service took a conspicuous part in the victory.

Fontevraud, or **Fontevrault,** a branch of the Benedictine order of monks; so named from the place where the first monastery of the sect was erected.

Fonvielle, Wilfried de, a French scientific writer; born in Paris, July 21, 1824. He aimed to popularize scientific truths by his writings.

Food, any substance which, taken into the body, is capable of sustaining or nourishing, or which assists in sustaining or nourishing the living being.

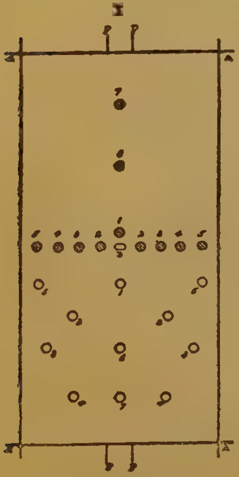
Fools, Feast of, the name of a festival regularly celebrated, with the most absurd ceremonies, both by clergy and laity, in several countries of Europe, from the 5th to the 16th century. It is said to have been introduced in imitation of the Roman Saturnalia, and its celebration took place about the same time, the great day being New Year's; but the ceremonies were often continued from Christmas to the last Sunday of Epiphany. The Feast of Fools was condemned by several Popes and bishops in the 15th century, and the Council of Basel, in 1435, expressed its detestation of this and several other festivals; but it continued to be observed in many places down to the time of the Reformation.

Fool's Parsley, a plant which grows wild in some places in the Northern States. It somewhat resembles parsley in its foliage and general appearance, so that serious accidents may occur from its being mistaken for that herb, it being a poisonous plant, similar to hemlock in its properties.

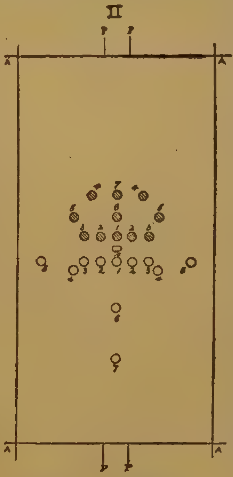
Foot, that part of the lower extremity below the leg on which we stand and walk. It is composed of three series of groups of bones — the tarsal, or hindermost; the metatarsal, which occupy the middle portion; and the phalanges, which form the toes. The tarsal bones are seven in number. Above, they are connected with the tibia and fibula bones of the leg, and below form the heel and the hinder part of the instep. The metatarsal bones are five in number, and belong to the class of long bones. They are connected posteriorly with the tarsal, and anteriorly with the phalangeal bones. Their anterior ends form the balls of the toes. The first metatarsal bone is the shortest and strongest, while the second is the largest — the others all decreasing in length according to their distance from it. These bones from the anterior portion of the instep. The phalanges, or bones of the toes, are 14 in number, three to each toe, except the great one, which has only two. The upper ones, which are longest and largest, are named the metatarsal; the next, the middle; and the most anterior, the ungual phalanges. The bones of the foot, more particularly those that compose the

HUMAN FOOT AND TOE; SIDE VIEW OF BONES.

tarsus and metatarsus, are firmly connected together, so that they are not liable to be displaced; and those parts where they articulate with one another being covered with a tolerably thick layer of highly elastic cartilage, they possess a considerable degree of elasticity. They are bound together in various directions, by a number of ligaments. The movements of the foot, which are permitted by the connecting ligaments, are affected by a variety of muscles. The foot is usually so much interfered with in civilized life as to be deprived of much of its beauty, and even of its utility; its movements being impeded by its being confined in tight-fitting boots, to the shape of which feet are made to conform.



FOOTBALL FIELD AT KICK-OFF.



FOOTBALL FIELD AT SCRIMMAGE.

In arithmetic, a measure of length, consisting of 12 inches, or 36 barleycorns laid end to end. It also expresses surface and solidity. A square foot is the same measure both in length and breadth, containing 12 × 12 = 144 square or superficial inches. A cubic or solid foot is the same measure in all directions, or 12 inches long, broad and deep, containing 12 × 12 = 144 × 12 = 1,728 cubic inches to the solid or cubic foot. As this term is employed in almost all languages as a linear measure, it has doubtless been derived from the length of the human foot. Though the denomination is the same, the measure itself varies considerably in different countries.

As a military term, soldiers who march and fight on foot; infantry; as, horse and foot.

Football, a field game played in the United States, Great Britain, Canada, and Australia. The game is said to have originated among the Romans, but it was under the guidance of the public schools of Great Britain that it advanced and became popular. There are at present several styles of football, the American and English Rugby, and the Association games, being the most popular. The American Rugby game is played among the colleges, schools, and athletic clubs of the United States. The game is played on a field 330 feet long and 160 feet wide, the boundaries being marked off with chalk lines, with lines at every five yards, running across the field. Two goal posts are placed 18 feet 6 inches apart in the middle of each end line. These posts are 20 feet high and have a cross bar 10 feet from the ground. The ball has an oval-shaped leather covering containing an inflated rubber bladder. The football team consists of 11 men, the center, two guards, two tackles, two halfbacks, two ends, the quarterback, and the fullback. The game is commenced by one team placing the ball in the center of the field and kicking it into the opponents' territory. One of the opponents catches it, and runs forward until tackled and thrown by one of the other team. The ball is then put down for scrimmage. The center of the team holding the ball passes it back between his legs to the quarterback, who in turn passes it to some man who runs with it. The men on the opposing team try to keep the ball from advancing by throwing the runner. When the runner is stopped he calls "down" and the ball is held. The team is allowed three downs, in which it must either advance the ball 5 yards, or lose 20 yards, or surrender the ball to its opponents. The game continues until one team forces the ball over its opponents' goal line. This is called a touchdown, and scores five points. The ball is then taken out, about 15 yards from the goal line, in a line parallel to the side lines, from the point where the ball was downed. A member of the team then tries to kick the ball over and between the opponents' goal posts. This kicked goal counts one point. The ball is then taken out to the center of the field and kicked off again by the losing team. The game is played in two halves of 35 minutes each, with a 10 minute intermission.

The game has been greatly developed by the American colleges, and a uniform system of rules governs the play.

The English game differs from the American in that 15 men, instead of 11, form a team. The game is more open, more kicking being done, but does not develop team work and interference to any great extent. In the Association game the ball is advanced entirely by kicking, butting with the head, "kneeing" and "breasting," the hands not being used at all. The team consists of five forwards, three halfbacks, two fullbacks, and a goal tender. The goals are made by kicking the ball between goal posts, 8 feet apart, and under a bar 8 feet from the ground.

Foote, Andrew Hull, an American naval officer; born in New Haven, Conn., Sept. 12, 1806; entered the navy as a midshipman in 1822. In 1849–1852 he was engaged in the suppression of the slave trade on the coast of Africa. In command of the China station in 1856, when the Chinese and English were at war, he exerted himself to protect American property, and was fired upon by the Celestials. His demand for an apology was refused and he stormed and captured four Chinese forts, killing and wounding 400 of the garrisons of 5,000 men. In 1861 he commanded the expedition against Forts Henry and Donelson on the Tennessee and Cumberland rivers, and directed the attack on Island Number 10. In 1862 he was promoted rear-admiral, and in 1863 was ordered to take command of the South Atlantic Squadron, but died in New York while preparing to join his flag-ship, June 26, 1863. He was noted for earnest religious principles and practise in war and peace.

Foote, Henry Stuart, an American statesman; born in Fauquier co., Va., Sept. 20, 1800; was graduated at Washington College in 1819. In 1847 he was elected to the United States Senate from Mississippi, and in 1852 was elected governor of the State. He was a strong opponent of secession at the convention held at Knoxville, Tenn., in 1859, but when secession was an assured fact, he accepted an election to the Confederate Congress where he was active in his opposition to most of President Davis's measures. Senator Foote was one of the most conspicuous of Southern duelists. He died in Nashville, Tenn., May 20, 1880.

Foote, Lucius Harwood, an American diplomatist; born in Winfield, N. Y., April 10, 1826; was educated at Knox College and at the Western Reserve University; and went to California in 1853. He was appointed minister to Korea in 1882; distinguished himself in the protection of Japanese and other foreigners in the nationalist revolt in Seoul in 1883, and received the thanks of the Emperor of Japan, the Chinese government, and the Emperor of Korea for his services. He resigned in 1884 and returned to California, where in 1890 he was made treasurer of the San Francisco Academy of Sciences.

Foote, Mary (Hallock), an American author; born in Milton, N. Y., Nov. 19, 1847; married a mining engineer. She has been the author of several novels and collections of short stories illustrated by herself, on life in the Rocky Mountain regions.

Foote, Samuel Augustus, an American statesman; born in Cheshire, Conn., Nov. 8, 1780; and was graduated at Yale College in 1797. He served one term in the United States Senate; was governor of Connecticut, and one of the presidential electors on the Clay and Frelinghuysen ticket in 1844. It was he who in 1829 introduced the bill "on the public lands" that occasioned the famous debate between Hayne and Webster. He died in Cheshire, Conn., Sept. 15, 1846.

Footprints, the footmarks or imprints left at inconceivably remote periods by the feet of various animals on the wet clay or sand of sea-beaches or similar localities, and which are now found at various levels in the solid strata of the earth. The footprints in the Silurian and other very antique rocks are mostly those produced by the claws of crustaceans. In the Triassic rocks of Connecticut, the footprints of 32 or more species of bipeds, and 12 of quadrupeds, have been found.

Foraker, Joseph Benson, an American statesman; born near Rainsboro, O., Jan. 5, 1846; enlisted as a private in the 89th Ohio Infantry and served till the end of the Civil War. He was graduated at Cornell University in 1869, and began law practice in Cincinnati, in the same year. He was judge of the Superior Court of Cincinnati in 1879–1882, governor of Ohio in 1885–1887 and 1887–1889, and United States Senator in 1897–1903, being again elected in the latter year.

Forbes, Archibald, a British journalist; born in Morayshire, Scotland, in 1838; was educated at the University of Aberdeen. Subsequently he watched the course of events in Servia; described the war with Turkey; and went to India to report the Afghan War, and to South Africa for the Zulu War. Afterward he revised his letters and reports, and recast them into historical narratives of the various campaigns. He died in London, March 29, 1900.

Forbes, David, an English geologist; born in Douglas, Isle of Man, Sept. 6, 1828. As a civil engineer he traveled all over the world, studying rock formations and fossils, and writing "On the Geology of Bolivia and Southern Peru" (1861); and kindred treatises. He died in London, Dec. 5, 1876.

Forbes, Duncan, a Scotch jurist; born near Inverness, Scotland, Nov. 10, 1685. He studied at Paris, Utrecht, and Edinburgh, and rose, in 1737, to the rank of president of the Court of Session. It was mainly owing to his exertions that the rebellion of 1745 was prevented from spreading more widely among the clans; but so ungratefully was he treated by the government, that he was never able to obtain repayment of the various sums he had expended to uphold it. He was the author of "Thoughts on Religion," the "Culloden Papers," etc. He died Dec. 10, 1747. The Astor Library contains an interesting work about him.

Forbes, Edward, a British naturalist; born in Douglas, Isle of Man, Feb. 12, 1815. He died Nov. 18, 1854. His active public life did not exceed five and twenty years, but into that period were crowded the labors and triumphs of the longest career; yet his work was only half done; and as was remarked of the father of modern geology, the loss sustained by his death was aggravated by the consideration of how much of his knowledge had perished with himself, and notwithstanding all that he had written, how much of the light collected by a life of experience and observation was now extinguished.

Forbes, Henry O., a Scotch naturalist; born in Aberdeen, Scotland, Jan. 30, 1851. He traveled in Java, Sumatra, Timor, and New Guinea, and wrote "New Guinea" (1886); which last domain he has most exhaustively explored.

Forbes, John Franklin, an American educator; born in Middlesex, N. Y., June 13, 1853; was graduated at the University of Rochester in 1878. In 1885 was made president of the John B. Stetson University in Deland, Fla.

Forbidden Fruit, the mythic fruit of the tree of the knowledge of good and evil, which our first parents were commanded not to eat. What fruit it was is wholly unknown. (Gen. ii: 9; iii: 3–6, 11, 17.)

Forbin, Claude, Chevalier de, a French naval officer; born in Gardannes, France, Aug. 6, 1656. In 1685 he accompanied the French ambassador to Siam, where he gained the favor of the king, then desirous of introducing into his kingdom the Christian religion and the civilization of the West. Forbin remained two years, as high admiral, general, etc., to his Siamese majesty. In 1708 he was intrusted with the command of the squadron which was to convey the Pretender to Scotland, but owing to the vigilance of Admiral Byng, he could not effect a landing. He wrote his "Memoirs" (1730). He died near Marseilles, France, March 4, 1733.

Force, in physics, an influence or exertion which, if made to act on a body, has a tendency to move it when at rest, or to affect or stop its progress if it be already in motion. The strength of man's arms is a force, so is the power of a horse or ox to pull a vehicle, or turn a wheel, or set in action an agricultural machine. Gravity, friction, elasticity of springs or gases, electrical or magnetical attraction or repulsion are forces. Accelerated force is the increased force which a body exerts in consequence of the acceleration of its motion. Active force is force which tends to move another body from a state of rest. Animal force is the muscular strength of man, horses, asses, cattle, or other animals viewed as a moving power.

Force, Peter, an American historian; born near Little Falls, N. J., Nov. 26, 1790. His life work, entitled "American Archives," a valuable collection of 22,000 books and 40,000 pamphlets, was bought by the government (1867) and placed in the library of Congress. He died in Washington, D. C., Jan. 23, 1868.

Forceps, a name common to certain instruments of various shapes, according to the purpose they are intended to serve; but the principle of all is that of a pair of pincers with two blades, either with or without handles. They are much used in surgery, especially for taking hold of substances that cannot be conveniently laid hold of with the fingers. Certain kinds are used for tooth-drawing; others for securing the mouths of arteries, in order to their being tied; others are used in dissecting; others in lithotomy, and others in midwifery for aiding delivery in difficult cases.

Force Pump, a pump which delivers the water under pressure, so as to eject it forcibly or deliver it at an elevation. The term is used in contradistinction to a lift pump, in which the water is lifted, and simply runs out of the spout.

Forchhammer, Peter Wilhelm, a German classical scholar; born in Husum, Prussia, Oct. 23, 1801. Topography and mythology were his special fields. He died in Kiel, Prussia, Jan. 9, 1894.

Forcible Entry, an offense against the public peace, which is committed by violently taking or keeping possession of lands and tenements, with menaces, force, and arms, without the authority of law. Proceedings in case of forcible entry are regulated by the statutes of the several States, and relate to a restitution of the property, if the individual who complains has been dispossessed, as well as to the punishment of the offender for a breach of the public peace.

Forcite, an explosive invented by Lewin. It is a modification of the gelatine dynamite, with almost identical properties.

Ford, James Lauren, an American journalist; born in St. Louis, Mo., July 25, 1854. He has written several volumes of short stories and essays; also books for young readers.

Ford, John Donaldson, an American engineeer; born in Maryland; was graduated at the Potts School of Mechanical Engineering in June, 1862, and entered the United States navy as third assistant engineer in July of that year. During the Civil War he took part in several important engagements. Later, after having served on many expeditions, he was detached and ordered to Baltimore for the purpose of organizing the Baltimore Manual Training School. In 1890 he was made chief engineer in the navy; was assigned to duty on the "Brooklyn" in 1896; and in 1898 joined the Asiatic fleet and took part in the destruction of the Spanish fleet and batteries at Cavite.

Ford, Paul Leicester, an American author; born in Brooklyn, N. Y., in 1865. He was killed by his brother Malcolm, May 8, 1902. He wrote historical and biographical works, as well as a number of novels.

Ford, Sallie Rochester, an American story-writer; born in Rochester Springs, Boyle co., Ky., in 1828. Together with her husband she edited the "Christian Repository" and the "Home Circle" for years.

Ford, Walter, an American songwriter; born in Philadelphia, Pa., about 1860; was the senior member of Ford & Bratton Co., publishers of popular songs. With his partner, John W. Bratton, he brought out about 100 songs of which he wrote the words. He died in Bath Beach, Long Island, N. Y., March 6, 1901.

Ford, Worthington Chauncey, an American statistician; born in Brooklyn, N. Y., Feb. 16, 1858; was chief of the Bureau of Statistics, Department of State, in 1885–1889, and of the Bureau of Statistics in the Treasury Department in 1893–1898; became connected with the Boston Public Library in 1897; was chosen Lecturer on Statistics in the University of Chicago in 1901.

Fore-and-aft, a term denoting the whole length of a ship, from stem to stern. A fore-and-aft sail is one whose middle portion is fore-and-aft; one which is attached to a spar or stay in the midship line of the vessel, and not to a yard, which is athwart ship.

Forecastle, a short deck placed in front of a ship above the upper deck. It is generally terminated at each end, in ships of war, by a breastwork, the foremast part reaching to the beakhead, and the after portion reaching to the fore-chains. This part of a ship used to be very much elevated in former times, for the accommodation of archers and cross-bowmen; whence the term forecastle.

Foreign States, in law, every nation is foreign to all other nations; and the several States of the American Union are foreign to each other, with respect to their municipal laws. But the reciprocal relations between the National government and the several States are not considered as foreign, but as domestic.

Foreign Judgment, in law, the judgment of a foreign tribunal. Such judgment may be evidenced by exemplifications certified under the great seal of the state or country where the judgment is recorded, or under the seal of the court where the judgment remains.

Foreign Laws, the laws of a foreign country. The courts do not judicially take notice of foreign laws; and they must, therefore, be proved as facts. When evidence is given of those laws, the court is to judge of their applicability to the matter in issue.

Forelands, North and South, two headlands on the S. E. coast of England, and on the E. seaboard of the county of Kent; the first, or North Foreland, forms the N. E. angle of the county; it projects into the sea in the form of a bastion, and consists of chalky cliffs nearly 200 feet in height. A lighthouse of the first class, having a fixed light elevated 340 feet above the level of the sea, was erected on this promontory in 1688. The South Foreland, about 16 miles S. of the former, consists also of chalky cliffs, and has two lighthouses, with fixed lights, erected upon it, to warn ships coming from the S. of their approach to the Goodwin Sands.

Forensic Medicine, the science of medicine as applied to law; medical jurisprudence.

Foreordination, or **Predestination,** according to the Calvinistic view, the predestination before the foundation of the world of some to eternal life and others to eternal death.

Foresters, any of several fraternal benefit societies, so called. The Ancient Order of Foresters was founded in England in 1745, and was established in America in 1839. The returns of the order for 1899 show the total membership in the world on Dec. 31 of that year to be 912,669 and in America 38,089. The Foresters of America, a distinct organization, was founded in 1864, reported a membership of 142,605. The Independent Order of Foresters was founded in 1874, and the returns of the order for 1898 show a total membership in the United States and Canada of 142,000.

Forest Laws, in English law, laws for the regulation of the forest. These were instituted under the Conqueror, and were so severe that a man killing a deer might be mutilated and put to death. The Long Parliament put an end to these extortions.

Forestry, the act, occupation, or art of forming and cultivating forests; the systematic utilization, reproduction and improvement in productive capacity of trees in masses, including the planting and culture of new forests. The usefulness of forests to man lies: (1) in their furnishing him with timber for fuel and for manufacturing and building purposes as well as with other serviceable products, such as their bark, their sap (by distillation), turpentine, creosote, wood alcohol, vanilin, etc.; also fertilizers, fodders, materials for textile fabrics, dyes, inks, etc. (2) in their influence on climate, by furnishing large tracts of superior coolness, by conserving humidity, decreasing evaporation, breaking the force of winds, etc. (3) In their influence on the waterflow, by keeping the ground more moist, conserving the springs, making the outflow of water more steady and regular, and causing the snow within them to melt more slowly, thus preventing dangerous floods; causing the rainfall to sink slowly into the soil rather than to flow in torrents over the surface; also by holding the soil together with their roots, so keeping the hillsides from being denuded and preventing their soil from being carried down over the cultivable fields below, sanding over valleys and silting up streams. This being the case, not only private interest exists in forests but a public interest, which necessitates at times governmental action — an action to which in the United States we have but recently awaked. Such action ests on the following principles: (1) The widest scope should be allowed to private enterprise in production, care being taken that abundant statistics n regard to supply and demand and opportunity for education on the subect be furnished. (2) Adequate legal protection should be given to forest property. (3) Whenever improper management threatens damage to neighboring property the State should nterfere to enforce proper management. (4) Wherever public welfare demands the reforestation of denuded tracts, the State should assist individual or communal enterprise in performing this, or else do the reforestng as a work of internal improvement. (5) In cases where a permanent forest is desirable and private nterest can not be relied on for its proper management, the State should own and manage it.

The total woodland area in the United States is estimated at 1,094,514 square miles, or about 699,500,000 acres, which is 36½ per cent. of the total land area, Alaska not included. The total annual consumption of manufactured forest products in the United States, according to the figures of the census of 1890, is more than 18,000,000,000 cubic feet, divided approximately as follows: Lumber market and manufactures, 2,250,000,000 cubic feet; fuel, 15,000,000,000 cubic feet; railroad ties, 27,000,000 cubic feet; fencing, 30,000,000 cubic feet; other items, 1,000,000,000 cubic feet. The amount of cubic feet of standing timber necessary to produce these quantities of usable material is immensely greater, probably almost double. The value of the annual products of our forests was estimated by the census of 1890 at $1,038,616,947. At the present rate of cutting the forest land of the United States cannot long meet the enormous demand made upon it. By far the greater part of the white pine has been cut, and vast inroads have been made into the supply of other valuable timbers. In many sections of the country more timber falls by fire than by the axe. The average annual loss from fire is not less than $20,000,000.

For the preservation of the forests, the State of New York first instituted a Forest Commission in 1885. The Legislature of 1897 authorized the purchase of lands in the Adirondacks as an addition to the Park and Forest Reserve to the amount of $1,000,000, to which $500,000 in 1898 and $300,000 in 1899 have since been added. A State College of Forestry has been opened at Cornell University, and has charge of 30,000 acres of State land as a demonstration forest in the Adirondacks. Better methods of handling, spruce lands have been introduced on 150,000 acres of private forests, under the direction of the Division of Forestry, U. S. Department of Agriculture. The States of Kansas, Michigan, Minnesota, Maine, New Hampshire, Pennsylvania, and Wisconsin also have special commissions under their forestry laws. The Pennsylvania Legislature of 1897 provided for the purchase of three forest reserves of not less than 40,000 acres each, and the Wisconsin Assembly appointed a commission to formulate and recommend forest legislation. Michigan, also, in 1899, appointed a commission to study the forest question and select land for a State forest reserve. Minnesota has probably the best forest fire law of any State, with a chief fire warden as executive officer. In New Jersey and North Carolina the Geological Survey is specially charged with forest interests.

A national organization known as the American Forestry Association, composed of delegates from the States, meets annually. Local or State associations have been formed in several of the States.

By act of March 3, 1891, the President is authorized to make public forest reservations. Seventeen such, comprising 17,968,440 acres, were established in Colorado, New Mexico, California, Arizona, Wyoming, Oregon, and Washington, previous to 1897. On February 22, 1897, President Cleveland proclaimed 13 additional reserves, with a total area of 25,683,840 acres.

The total area of the forest reservations was on Oct. 15, 1900, 46,828,449 acres.

Forey, Elie Frederic, a French military officer; born in Paris, France, Jan. 10, 1804. When the expedition to Mexico was decided upon in 1861, Forey received the command of the French troops. After several sanguinary engagements, he attacked and stormed the strong post of Puebla, thereby throwing open the road to the city of Mexico. For this service he was made Marshal of France, when he resigned his command to General Bazaine, and returned home, receiving the command of the 2d army corps, in 1863. He received the Grand Cross of the Legion of Honor in 1859, and was elected to the senate in that year. Died in Paris, France, June 20, 1873.

Forfeiture is a punishment annexed to some illegal act or negligence in the owner of real property, whereby he loses all his interest therein, and it goes to the party injured, as a recompense for the wrong which either he alone or the public with him has sustained. It is almost unknown in the United States.

Forge, the apparatus or works for heating bars of iron and steel and working them under the hammer. Works in which cast iron from the blast furnaces is converted into malleable iron by puddling and subsequent hammering, and also where the native ores of iron are reduced without fusion to the metallic state, are also called forges.

Forget-me-not, creeping water scorpion grass, a plant about a foot high. The flowers are bright blue with a yellow eye and a small white ray at the base of each segment. It is found abundantly in ditches and the sides of rivers, flowering from June to August.

Fork, an instrument divided at the end into two or more points or prongs and used for lifting or pitching anything. The instrument used at table is only about three centuries old. The use of any species of forks at the table was quite unknown till the 15th century, and they were then known only in Italy, which has the merit of this invention. As late as the middle of the 17th century forks were used in America and England only by the highest classes. The general use of silver forks in America cannot be dated farther back than the beginning of the 19th century.

Forlorn Hope, a body of men selected to attempt a breach, or to lead in scaling the walls of a fortress. The name is given on account of the extreme danger to which the leaders of a storming party was necessarily exposed. As, however, the honor of success is proportionable to the peril of the undertaking, there is ordinarily no lack of volunteers for this arduous service.

Formation, in geology, a term used in speaking of certain large groups of rock, whether stratified or unstratified. Thus it is usual to speak of a limestone, a sandstone, or a clay formation, or a granite or slate formation, without reference to limestones or other rocks of any particular age. So also we speak of Tertiary and Secondary formations, and formerly of Primary, now Palæozoic formations — the term then referring to a natural group, definite in respect to age, but indefinite as to material.

Formosa (Chinese Tai-Wan, or "Terrace Bay"), an island in the Chinese Sea, belonging to Japan;

bout 80 miles from the Chinese coast, rom which it is separated by the Channel of Foh-kien (sometimes called Strait of Formosa), and 170 miles N. of Luzon, the chief of the Philippine slands; length, N. to S., about 250 iles; breadth, in its center, about 80 iles; area estimated at 13,300 square iles. A chain of mountains runs hrough the island in its entire length, orming, in general, the barrier be-ween the Chinese on the W., and the ndependent natives of the unexplored ountry on the E. side. On many of its peaks snow remains during the ost part of the summer. It exhibits istinct evidence of former volcanic ction, and sulphur, naphtha, and other volcanic products are abundant. Soil, highly fertile and productive, so uch so indeed that this island has ong been familiarly known as the granary of the Chinese maritime provinces. All the large plain of the S. resembles a vast cultivated garden. The principal productions are rice, ugar, camphor, tobacco, wheat, maize, illet, truffles, vegetables, and the hoicest of Asiatic and European ruits; pepper, aloes, green tea, cot-on, hemp, and silk are also important rticles of cultivation. The leopard, iger, wolf, etc., are found in the more mpenetrable tracts of the interior; he domestic breeds of animals, game, tc., are abundant. Gold is believed o impregnate the soil in the E. part of the island; but the chief mineral eposits are salt and sulphur. The rade is mostly in the hands of Chinese nd British merchants, who also own ll the shipping. The principal arti-le of import is opium. The natives ear no resemblance to the Chinese; ut they have an apparent alliance ith the Malay or Polynesian race. The Japanese, Spanish, Portuguese, and Dutch have been successively masters of this island. The Japanese, to whom t was ceded after the Chinese-Japan-se war of 1894, have since been en-aged in almost continuous conflict ith the natives to retain it. Popula-ion, 2,729,503, not including mountain ribes or resident Japanese.

Formula, in chemistry, an expres-ion by means of symbols, especially etters and numbers, of the chemical lements contained in a compound; in edicine a prescription. In mathematics, a formula is the expression of a general rule or principle in algebraic symbols.

Fornaris, Jose, a Cuban poet; born in Bayamo, Cuba, in 1826. He wrote dramas and volumes of verse.

Forneron, Henri, a French historian; born in Troyes, France, Nov. 16, 1834. He was connected with the ministry of finance. He died in Paris, March 26, 1886.

Forney, John Weiss, an American journalist; born in Lancaster, Pa., Sept. 30, 1817. He was apprenticed in the office of the Lancaster "Journal" in 1833; was clerk of the National House of Representatives from 1851 to 1855; and secretary of the United States Senate from 1861 to 1868. He was connected with several papers in Philadelphia and Washington. He died in Philadelphia, Pa., Dec. 9, 1881.

Forrest, Edwin, an American actor; born in Philadelphia, Pa., March 9, 1806. He played with remarkable success in Europe and the United States, but in 1871 retired from the stage. He died in Philadelphia, Pa., Dec. 12, 1872.

Forster, Ernst, a German author; born in Munchengosserstadt, Germany, April 8, 1800. He was known as an artist as well as art critic. He died in Munich, Bavaria, April 29, 1885.

Forster, Friedrich Christoph, a German author; born in Munchengosserstadt, Germany, Sept. 24, 1791. He fought in the war of liberation, and with a "Battle Cry to the Aroused Germans" won fame as a song-writer. He died in Berlin, Germany, Nov. 8, 1868.

Forster, Johann Reinhold, a German naturalist; born in Dirschau, Prussia, Oct. 22, 1729. In 1772 he received the offer of naturalist to Captain Cook's second expedition to the South Seas. In association with his son, he published a work on the botany of the expedition, and "Observations Made During a Voyage Round the World." In 1778 he returned to Germany, and was soon afterward made Professor of Natural History and Mineralogy at Halle, where he died, Dec. 9, 1798.

Forster, John, an English historical writer; born in Newcastle-on-Tyne, England, April 2, 1812. He was educated for the law; held one or two public offices, and finally engaged in literature and journalism. He died in London, Feb. 2, 1876.

Forsyth, George Alexander, an American military officer; born in Muncy, Pa., Nov. 7, 1837; served with unusual distinction in the Civil War, taking part in 16 pitched battles, two sieges, and over 60 minor engagements; was brevetted Brigadier-General in 1868 for his action in an engagement with hostile Indians. He was a member of the board of officers to inspect the armies of Europe and Asia in 1875–1876, and on staff and frontier service till 1890, when he was retired on reaching the age limit.

Forsyth, James W., an American military officer; born in Ohio, Aug. 26, 1836; was graduated at the United States Military Academy in 1856 and assigned to frontier duty. During the Civil War he served on General McClellan's staff in the Peninsular and Maryland campaigns; was brevetted major for gallantry at Chickamauga in 1863, and served as assistant adjutant-general of volunteers and chief of General Sheridan's staff in 1864–1865. Subsequently he was assistant inspector-general of the Department of the Gulf in 1866–1876; aide to General Sheridan in 1869–1873, and colonel of the 7th cavalry. He was retired in 1897, with the rank of Major-General, U. S. A.

Forsyth, Joseph, a Scotch descriptive writer; born in Elgin, Scotland, Feb. 18, 1763, and died in that place Sept. 20, 1815.

Fort, in the general sense of the word a small, inclosed work, usually erected near an important fortress or fortified town, to command any of the approaches to it. In North America, generally, the name was also applied to a trading post in the wilderness with reference to the indispensable defenses, however slight, against the surrounding savages. It has thus been employed to designate merely a palisaded log hut — first oasis of civilization of the desert — and such is generally the origin of the places to which the name fort is prefixed.

Forth, a river of Scotland, risin on the E. side of Ben Lomond, i Stirlingshire. After a sinuous cours E. past Aberfoyle, Stirling, and Alloa it unites with an arm of the sea, calle the Firth of Forth. The Forth possesses many good harbors, and St Margaret's Hope, above Queen's Ferr is one of the safest roadsteads in th island. Length of river, including it "links," 180 miles. The Firth at it mouth is about 40 miles wide.

Forth Bridge, a remarkable worl in engineering, spanning the Firth o Forth in Scotland; completed an formally opened on March 4, 1890 The construction was begun early i 1883, and the total cost up to th time of completion may be given i round numbers as $16,000,000. Th following statistics are giver in paper on "The Bridge and Its History," by Philip Philips, one of th resident engineers: Total length, upward of 1½ miles; cantilever arm projection (outer), 680 feet; depth o cantilevers over piers, 342 feet; dept at ends, 41 feet; distance apart o lower members at piers, 120 feet; distance apart of lower members at ends 31.5 feet; diameter of largest tubes 12 feet; top members, distance apar at vertical columns, 33 feet; to members, distance apart at ends, 2 feet; struts, largest diameter, 8 feet ties, greatest length, 327 feet; centra girder, span, 350 feet; central girder depth at center, 51 feet; centra girder, depth at ends, 41 feet; interna viaduct spans, various, 39 to 145 feet; total amount of steel in bridge, ove 50,000 tons; south-approach viaduct total length, about 1,980 feet; south-approach viaduct, average span, 16 feet; wind pressure allowed for, 5 pounds per square foot; depth of water in channels to be spanned, 218 feet; height of cantilever pier (masonry) above water, 209 feet; greatest air pressure in working the caissons, 32 pounds above atmosphere; weight on a single pier, 16.000 tons; thickest steel plates, 1¼ inch; length of plates used in tubes alone, 40 miles; greatest depth of foundations, 88 feet below high water; contraction and expansion allowed for, between 6 and 7 feet. The designers of the bridge were Sir John Fowler and Benjamin Baker.

Fortier, Alcee, an American educator; born in Louisiana, June 5, 1856. He won distinction when very young, with stories of life in his native State. In 1880 he became Professor of Romance Languages in Tulane University.

Fortification, the art of increasing by engineering devices, the fighting power of troops who occupy a position. The great improvements lately made in the construction of heavy guns have rendered it necessary to revise the systems of fortification formerly in vogue. Iron and steel turrets are taking the place of masonry on low sites which are much exposed and where earth cannot be employed advantageously. These turrets are revolving cupolas, with spherical roofs; while in some instances the guns are mounted on disappearing carriages. In the United States the frontiers exposed to attack being very largely maritime, the fortifications are principally batteries of heavy guns adapted to a contest with steel-plated ships. These are inclosed in the rear with a land front, as protection against a land attack, but not made sufficiently strong to stand a long siege, it being taken for granted that reinforcements can quickly be provided to repel a besieging force. It was formerly usual o mount guns in masonry casements built tier over tier, this method of building being common throughout the world. But this method has been disarded in consequence of the modern development in ships and guns. The ystem recommended by a board of military engineers, in 1886, proposed he use of steel turrets, armored casements, barbette batteries, mortar and loating batteries, and submarine mines; but so rapid has been the advance of military progress that the lan outlined by that board has been ery largely modified in recent contructions, it having been found that, ll things considered, earth and sand onstitute the most effective defense.

Iron-clad Forts.— For nearly an enire generation — ever since 1859 — he progress of fortification in Europe was in the direction of the use of some form of iron armor. In England he necessity for using iron in fortifiations was apparent just as soon as his material began to be used in ships, and in 1861 England entered upon the work of rebuilding her forts with iron. It was substantially completed in 1878, at a cost of $37,000,000, expended on nine harbors. Within the last few years have come the solid iron turrets, of enormous thickness, carrying two 80-ton guns each, which form part of the defenses of Dover, England. While many of these forts, which were built while the contest between guns and armor was still in progress, can be pierced by the more recent guns, yet the number of large guns which they mount is far superior to the number that could be brought against them afloat, and in connection with torpedoes and ironclad ships they afford a secure defense.

Fortlage, Karl, a German philosopher; born in Osnabruck, Germany, June 12, 1806. A Hegelian in his student days, he arrived finally at what we might designate "transcendental pantheism." He died in Jena, Nov. 8, 1881.

Fortress, the development of modern ordnance has rendered fortification as exhibited in the construction of the fortresses of the past practically obsolete and useless. It is probable that no fortress in the world (with the exception, perhaps, of Gibraltar, the natural situation of which renders it inexpugnable) would form a serious obstacle to a modern naval or land attack, if the assailants were provided with the most approved modern heavy guns. In view of this fact the construction of fortresses has been directed almost entirely to enabling them to cause a ricochet of shots directed against them rather than to oppose the direct impact. Hence modern fortresses are usually small, and present nowhere a direct angle to the line of fire, being generally constructed on the turtle-back or spherical plan. They usually contain but few guns, and those of the heavier calibers, rendering them offensive rather than great strongholds of defense, as formerly. Of this latter class the strongest fortress surviving in the United States is Fortress Monroe, on Hampton roadstead in Virginia, erected for the defense of Norfolk navy yard. It was planned and built by a French engineer, and was an important Federal stronghold during the Civil War.

The greatest fortress in the world, from a strategical point of view, is the famous stronghold of Gibraltar, on the coast of Spain. The fortress is considered impregnable to military assault. The regular garrison in time of peace numbers about 7,000. It belongs to England.

Fortuna, in mythology, daughter of Oceanus, according to Homer, or one of the Parcæ according to Pindar, was the goddess of fortune, and from her hand were derived riches and poverty, pleasures and pains, blessings and misfortunes. She was worshiped in different parts of Greece.

Fortunatæ Insulæ, in mythology, islands at the W. of Mauritania, in the Atlantic Ocean, supposed to be the Canary Isles of the moderns. They are represented as the seats of the blessed, where the souls of the virtuous were placed after death.

Fort Worth University, a co-educational institution in Fort Worth, Tex., founded in 1881 under the auspices of the Methodist Episcopal Church.

Forty Immortals, The, the members of the French Academy.

Forum, an open space in Roman cities, generally surrounded by a covered colonnade, that fronted an ambulatory, and buildings of various kinds, such as temples, courts of law, prisons, granaries, etc. The Forum Romanum, the first that was erected in Rome, served equally for the purposes of trade and all public meetings, as well as for the administration of justice by the consuls, decemvirs, and other magistrates of Rome. This forum was subsequently distinguished for its magnificence; the shops were removed, and many temples of the heathen gods, the senate-house, and the comitium, were erected in its immediate vicinity, and in communication with it. It was also adorned with arches, statues, and pulpits, from which public meetings were addressed, and which were called, rostra, from being surrounded with the brazen beaks (rostra) or ornaments of the prows of the ships of war that had been captured by the Roman triremes. Exhibitions of gladiators were often shown in the forum. The Roman forum corresponded to the agora of the Greeks, and no Roman city o colony was without this importan center for the transaction of busines and public affairs.

Forward, Walter, an America statesman; born in Connecticut i 1786. In 1849 he was appointe charge d'affairs to Denmark, but resigned in 1851 to become president judge of the District Court of Allegheny co., Pa. He died in Pittsburg Pa., Nov. 24, 1852.

Forwood, William H., an American military surgeon; born in Delaware, Sept. 7, 1838; was graduate at the Medical Department of the University of Pennsylvania and a Georgetown University, Washington D. C.; entered the regular army a an assistant surgeon in 1861, an served throughout the Civil War; an was brevetted captain and major fo faithful and meritorious services. H located military hospitals in Savannah, Ga., and the camp hospitals i Montauk Point during the Spanis War; and was appointed surgeon-general of the army with the rank o Brigadier-General, in June 1902.

Foscari, Francesco, a doge o Venice; born in 1372, in 1416 wa named procurator of St. Mark's, an in 1423 was elected doge. His so Giacopo, being accused of ordering th assassination of a senator Donati, h was banished from the city, the fathe having to ratify the sentence. Lov of his country, and devotion of hi wife, compelled the banished Foscar at all hazards to revisit his belove Venice, where, being discovered b his enemies, he was denounced, agai made prisoner, put to the questio of the rack, and a second time banished, dying soon after of his wounds or the torments of his secret punishment, and of grief at separation fro his idolized family. The fate of th son had such an effect on the dog that the bereaved father went mad in which state the enemies of his family compelled him to abdicate. H died three days after in a spasm, upo hearing the bells of St. Mark's announce to Venice the election of new ruler. Byron has written on th subject a tragedy entitled "The Tw Foscari." He died in Venice, Nov 1, 1457.

Foscolo, Ugo, an Italian poet and patriot; born on the island of Zante, Jan. 26, 1778. He died Oct. 10, 1827, n London, England.

Fosdick, Charles Austin, an American writer of juvenile books; born in Randolph, N. Y., Sept. 6, 1842. He served in the Union navy n the Civil War from 1862 to 1865. Besides contributions to periodicals, he has published under the pseudonym “Harry Castlemon” over 30 books for boys.

Fossil, any body or the traces of he existence of any body, whether animal or vegetable, which has been buried in the earth by natural causes; one of the bodies called organic remains. Even the cast of a fossil shell, hat is the impression which it has eft on the rock, is deemed a fossil. (Used often in the plural.)

Foster, Charles, an American inancier; born in Seneca co., O., April 12, 1828; elected to Congress in 1870; governor of Ohio in 1879–1881; and Secretary of the United States Treasury in 1891–1893. He founded he town of Fostoria, O., and was long dentified with its principal business nterests.

Foster, Hannah (Webster), an American novelist; born in 1759. She died in Montreal, Canada, April 17, 1840.

Foster, Henry, an English scien-ist; born in Woodplumpton, Lan-ashire, in 1797. The gold medal of he Royal Society of Great Britain was awarded him for his services on he Arctic Expedition of Captain Ross n 1818–1819. On April 27, 1828, he ailed on the “Chanticleer,” as commander of an expedition to determine he direction of the principal ocean currents in both hemispheres. He was drowned while exploring the Chagres river in Panama, Feb. 5, 1831.

Foster, John Gray, an American military officer; born in Whitefield, N. H., May 27, 1823; was graduated at the United States Military Academy in 1846, entering the engineer corps. He served in the Mexican War and was brevetted captain for meri-orious services. For two years he aught at the United States Military Academy, but at the outbreak of the Civil War he was assigned to duty at Fort Sumter and was one of its garrison during the siege. In 1861 he was commissioned a Brigadier-General of volunteers; was later promoted Major-General of volunteers; and became commander of the Department of North Carolina, defending that region with skill. Subsequently he commanded the Departments of Ohio and Florida, and in 1865 was brevetted Major-General, U. S. A. He died in Nashua, N. H., Sept. 2, 1874.

Foster, John Watson, an American diplomatist; born in Pike co., Ind., March 2, 1836; was graduated at the Indiana State University in 1855; studied law, and was admitted to the bar in Evansville, Ind. After the Civil War, during which he served with distinction, he was editor of the Evansville “Daily Journal” and postmaster of that city; minister to Mexico in 1873–1880, to Russia in 1880–1881, and to Spain in 1883–1885; was special commissioner to negotiate reciprocity treaties with Spain, Germany, Brazil and the West Indies, in 1891; and United States Secretary of State in 1892–1893. Subsequently he was agent for the United States before the Bering Sea Arbitration Tribunal at Paris; participated in the peace negotiations with Japan; and in 1898 served as a member of the Anglo-American Commission.

Foster, Lafayette Sabine, an American statesman; born in Franklin, Conn., Nov. 22, 1806; was graduated at Brown University in 1828. He served several terms in the Legislature; was elected to the United States Senate in 1854; was president pro tempore of the Senate in 1865; and, after Andrew Johnson became President, was acting Vice-President of the United States. He died in Norwich, Conn., Sept. 19, 1880.

Foster, Stephen Collins, an American song-writer; born in Pittsburg, Pa., July 4, 1826; was educated at Athens Academy and Jefferson College, Pennsylvania. He composed the music and wrote the words of over 125 popular songs and melodies. He died in New York city, Jan. 13, 1864.

Fouche, Joseph, Duke of Otranto, a French detective; born in Nantes, May 29, 1763. The Revolution, into which he entered with enthusiasm, found him teaching philosophy in Nantes. As he had not taken orders he married, became advocate, and was sent to the convention by the department of Loire-Inferieure. Here he was placed on the committee for public education, voted for the death of the king, and was implicated, at least nominally, in the atrocities of the period. He was minister of police under the Directory, and gained the favor of Napoleon who made him a duke, but with good reason never fully trusted him. After the battle of Waterloo, Fouche urged Napoleon's second abdication, and advised him to seek an asylum in the United States. He placed himself at the head of the provisional government, negotiated the capitulation of Paris, obtained the removal of the army behind the Loire, and thus prevented useless bloodshed. Louis XVIII., who valued his ability, made him again minister of police; and it is to his credit that he labored so zealously in favor of moderate measures as to incur the hatred of all the ultra-royalists. He died at Trieste Dec. 25, 1820.

Fouchet, Jean Antoine Joseph, Baron, a French diplomatist; born in St. Quentin, France, in 1763; was a law student in Paris when the Revolution broke out and published a pamphlet in defense of its principles. Soon afterward he was appointed a member of the executive council of the Revolutionary government, and was French minister to the United States in 1794-1795. The date of his death is not known.

Foundation Stone, a stone of a public building laid in public with some ceremony. It has no necessary connection with the foundation of the building; commonly called corner-stone.

Founders and Patriots of America, The, a society founded in 1896, and incorporated March 18, the object stated in the articles of incorporation being "to inculcate patriotism; to discover, collect, and preserve records, documents, manuscripts, monuments, and history relating to the first colonists and their ancestors and their descendants, and to commemorate and celebrate events in the history of the colonies and the republic."

Foundling, a child abandoned b its parents and found by strangers Even in ancient times the State mad provision for the preservation of exposed children; but foundling hospital are an institution of modern times.

The foundling hospital in Paris wa formally established in 1670, and i the most famous institution of th kind in the world. It receives no only foundlings strictly so called, tha is deserted children of unknown parentage, but also deserted children o known parents, and destitute childre generally, as well as children pronounced incorrigible by the law court or declared to be so by their parents The institution also assists poor mothers by donations and by sendin nurses for their infants. The children received are at once sent to th country and boarded out, their foster parents receiving a certain paymen from the State, which ceases after 1 years. The children are then apprenticed or employed in some way, bu they do not pass from the supervisio of the State till they reach the age o 21. Foundling hospitals exist i many other countries. In the Unite States there is no hospital on the sam plan as at Paris, and the mortality o infants in public institutions has bee so great as to excite public amazemen and indignation.

Fouquier, Henry, a French journalist; born in Marseilles, Sept. 1 1838. For many years his livel talent enriched the columns of "Gi Blas," "Figaro," and "L'Echo d Paris," both over his own name an such pseudonyms as "Nestor," "Columbine," and "Columba."

Fouquier-Tinville, Antoine Quentin, an execrable monster of the French Revolution; bor in Heroul, France, in 1747. Hi early career was immoral, but insignificant. On the outbreak of the Revolution, he figured as one of the fierces democrats. By Robespierre he wa appointed, first, a member, then director and public accuser, of the revolutional tribunal. Without education conscience or sense of justice, he executed with brutal apathy the blood orders of the Committee of Publi Safety. Incapable of friendship, or o anything even remotely allied to generosity, he systematically abandone his successive coadjutors in their hour of need, and sent to the scaffold, without the slighest compunction, Bailly and Verginaud, Danton and Hebert, Robespierre and St. Just. He himself died by the guillotine, in a cowardly manner, May 7, 1795.

Fourier, Francois Marie Charles, a French social economist; born in Besancon, France, April 7, 1772. At first in trade, then in the army, the seeing a cargo of rice thrown into the sea to raise its price led him to attempt a reform abolishing the competitive system, by means of associated production and life in "phalansteries." He died in Paris, Oct. 3, 1837.

Fourier, Jean Baptiste Joseph, Baron, a French mathematician; born in Auxerre, France, March 21, 1768. He was an active Jacobin during the French Revolution. His later energies were divorced from politics and given up to science. He died in Paris, May 21, 1830.

Fourierism, a system partly of coöperation, partly of socialism; advocated, and to a certain extent carried out, by Francois Marie Charles Fourier. Fourier's scheme was that what he called from the word phalanx, a phalanstery, consisting of about 400 families, or 1,800 persons, should live together, combining their labor, upon a district about a square league in extent. The buying and selling transactions requisite for the support of the community were to be managed by a single person, which would save a multitude of peddling operations. If any brought capital into the concern, it was not confiscated, but he was allowed interest upon it. The labor being carried on in common, the profits were apportioned on the following system: First a minimum of mere subsistence money was assigned to every member of the society, including those incapable of labor. The remainder of the profits were then divided in proportions agreed on beforehand, to renumerate labor and talent, and pay interest on the capital received. The profits divided thus were then expended by the individual recipients as they pleased. An effort was made about 1852 to form an industrial colony on Fourier's plan, but the attempt was unsuccessful.

Fournel, Francois Victor, a writer on the antiquities and curiosities of Paris; born near Varennes, France, Feb. 8, 1829.

Fournier, August, an Austrian historian; born in Vienna, June 19, 1850. He also wrote many biographies and sketches of special periods.

Fournier, Edouard, a French historical writer; born in Orleans, France, June 15, 1819. The annals of the capital and its topographical features have received interesting treatment at his hands. He died in Paris, May 10, 1880.

Fowl, in its general sense, this term is nearly synonymous with birds; but in a more restricted sense it means those domestic birds brought up in a farmyard for the table. Fowls originally came from Persia and India, and they are valuable to the breeder in many ways, yielding profit as they do in eggs, in broods, and in feathers. The principal kinds of this useful domestic creature are: (1) the game fowl, with erect and slender body and showy colors; valued also for the delicacy of the flesh and of the eggs, though the latter are rather small. It is this breed which is used for cock fighting; and is characterized by great pugnacity. (2) The Dorking fowl, so named from Dorking, in Surrey, where it has long been bred in great numbers for the London market — a breed characterized by an additional spur on each leg; often of a white color, with short legs; one of the most useful of all breeds, both for excellence of flesh and for abundance of eggs. (3) The Polish fowl, black, with a white tuft, a breed very extensively reared in France, Egypt, etc., little inclined to incubation, but valued for an almost uninterrupted laying of eggs. (4) The Spanish fowl, very similar to the Polish, but larger, and laying larger eggs, on account of which it is now much valued, black, with white cheeks and large red comb. (5) The Malay fowl, tall and handsome, and very pugnacious, but little esteemed. (6) The Hamburg fowl, of very beautiful plumage, and much valued for the quality both of flesh and eggs, as also for extreme productiveness of eggs. (7) The Cochin China fowl, a large, tall, ungraceful variety, with small tail and wings, for which there was a great rage among poultry fanciers when it was introduced, more particularly about the year 1852, and which is valuable chiefly on account of its fecundity, eggs being laid even during winter, and the hens incubating frequently. (8) The bantam fowl, a diminutive variety, rather curious than useful. Of most of these there are many sub-varieties and fancy breeds — gold-penciled, silver-penciled, etc. The guinea fowl, or pintado, is sometimes classed among the common order of fowls; they are very wild and restless in their nature, and, unlike the ordinary fowls, they give no notice to any one of their laying or sitting; they have consequently to be closely watched. The guinea fowl is very delicate eating, and is in season about Lent. Their eggs are something like those of turkeys, but not so gross. As the guinea fowl rarely watches over her nest and rears a brood, its eggs are generally put under a common hen, which performs the duties of foster-mother.

Fowler, Charles Henry, an American clergyman; born in Burford, Ontario, Canada, Aug. 11, 1837; was graduated at Genesee College in 1859 and at the Garrett Biblical Institute in 1861; studied law; was pastor for 11 years in Chicago, Ill.; president of the Northwestern University in 1872–1876; and corresponding secretary of the Missionary Society in 1880. He was elected a bishop of the Methodist Episcopal Church in 1884; visited Japan, Korea, and China in 1888; organized the Peking and Nanking Universities; was stationed for eight years on the Pacific coast; founded the Maclay College of Theology in Southern California, and assisted in founding Wesleyan University in Lincoln, Neb. He was sent as a fraternal delegate to the Wesleyan Conference in Great Britain in 1898.

Fowler, Joseph S., an American lawyer; born in Steubenville, O., Aug. 31, 1820. He was State comptroller under Andrew Johnson; took a leading part in the State Constitutional Convention in January, 1865; and was a United States Senator in 1866–1871. In 1871 he retired from political life and engaged in law practice in Washington, D. C.

Fowler, Orson Squire, an Ame
ican phrenologist; born in Cohocto
Steuben co., N. Y., Oct. 11, 1809; w
graduated at Amherst College in 183
and opened a phrenological office
New York in 1835. He died ne
Sharon Station, Conn., Aug. 18, 188

Fowler, William Worthingto
an American author; born in Middl
bury, Vt., June 24, 1833. He died
Durham, Conn., Sept. 18, 1881.

Fox, an animal closely allied to t
dog; a native of almost every quart
of the globe; and generally esteem
the most sagacious and crafty of a
beasts of prey. All the species a
wily and voracious, greedily devouri
birds and smaller quadrupeds, dislik
and betrayed by most of those anima
who dread their attacks, and extrem
ly difficult to be tamed even wh
very young. The black fox inhabi
the N. parts of Asia and Ameri
and is much hunted owing to the val
of its fur. Some naturalists rega
it as a mere variety of the red fox.

The red fox is found througho
North America and has been co
sidered as identical with the comm
fox of Europe, though there can be n
doubt of their difference. The gener
color of this fox in summer is brig
ferruginous on the head, back, a
sides. Beneath the chin it is whit
while the throat and neck are of
dark gray. The under parts of t
body toward the tail are very pa
red. It is about 2 feet long and 1
inches high. The skins are mu
sought for and are employed in vario
manufactures.

The crossed fox differs very mu
from the common fox. The color
his fur is a sort of gray, resulti
from the mixture of black and whi
hair. He has a black cross on h
shoulders, from which he derives h
name. The muzzle, lower parts of t
body, and the feet, are black; the ta
is terminated with white. It inhabi
the N. parts of America, and may pe
haps be only a variety of the bla
fox.

The swift fox, a beautiful little an
mal, which was first accurately d
scribed by Mr. Say, inhabits the gre
plains which lie at the base of t
Rocky mountains. It is much sma
ler than the other American speci
and forms its habitation by burro

g. It is distinguished by its ex-
aordinary speed, which appears to
rpass that of any other animal. Its
dy is slender, and the tail rather
ng, cylindrical, and black. The hair
fine, dense, and soft.

The gray fox is common throughout
e N. parts of America, more par-
ularly in the neighborhood of habi-
tions. Its general color is gray,
coming gradually darker from the
oulders to the hips. It has a sharp
ad, marked by a blackish gray tri-
gle, which gives it a peculiar phys-
gnomy. The tail is thick, and con-
ins at its tip a tuft of stiff hairs,
nce the subgeneric distinction of the
istle-tailed foxes.

The Arctic fox is smaller than the
mmon fox. It has short rounded
rs almost hid in its fur; its hair is
ng, soft, and somewhat woolly; its
s are short, having the toes covered
th fur, like those of the hare; hence
specific name. It inhabits the coun-
es bordering on the frozen ocean in
th continents. Their skins are not
any great value, though frequently
ed as rugs.

Fox, Charles James, an English
tesman; second son of Henry, 1st
rd Holland; born Jan. 24, 1749.
e adoption of the disastrous meas-
es which terminated in the inde-
ndence of the American colonies was
ongly opposed by him. During the
ole of this eventful contest he spoke
d voted in direct opposition to the
nisterial system, and, in conjunc-
n with Burke, Barre, Dunning, and
ier eminent parliamentary leaders,
splayed the highest talents both as a
tesman and orator. He died Sept.
, 1806, without pain and almost
thout a struggle.

The opinions formed of this eminent
der as a practical and theoretical
tesman, it is unnecessary to say,
ve been as various as the shades of
rty difference. That he was a
cere friend to all the broad and
nerous principles on the due de-
lopment of which rest the freedom
d best interests of mankind, is not
be doubted, and that they were al-
yed by great latitude on the subject
party and political expediency is
ually clear. As a powerful and
rely argumentative orator he was of
e very first class; though as to eloquence and brilliancy he perhaps yielded to Pitt, Burke, and Sheridan; nor were his voice and manner prepossessing, though highly forcible.

Fox, George, founder of the society of Friends; born in Drayton in Leicestershire, England, in July, 1624. His father was a weaver, and by the strict honesty of his conduct had won from his neighbors the sobriquet of "Righteous Christer." George, while yet a boy, was distinguished by his gravity and exemplary conduct. When in the 20th year of his age he received that which he regarded as the voice of God in his soul, directing him to Christ as alone able "to speak to his condition." Very soon after this he commenced his public ministrations. From the first, his preaching seems to have made many converts and excited much opposition. Within 10 years of Fox's first appearance as a preacher, meetings of the Friends were established in most parts of England. At the same time, so actively were they persecuted that for many years there were seldom less than 1,000 of them in prison. The act empowering magistrates to tender the oaths of allegiance and supremacy to any person whom they thought fit to suspect, also operated with great severity against the Friends; under its provisions Fox was committed to prison at Lancaster in the beginning of 1664, whence he was removed to Scarborough Castle, where he lay till the autumn of 1666. In 1669 Fox married Margaret Fell, the widow of one of the judges of the Welsh courts. The year 1670 witnessed the passing of the most stringent of the Conventicle Acts, forbidding under heavy penalties the assembling for religious worship, in any house, of more than four persons besides the family, except according to the usages of the Church of England. Fox exhorted his friends to firmness, and himself remained in London, to share with their sufferings. Soon after his recovery from a severe illness he sailed for Barbadoes, where he exerted himself greatly in the interests of religion and humanity. It was while in this island that Fox drew up a statement of his own and his friends' belief in all the great doctrines of Christianity — a statement clearly disproving their alleged sympathy with Socinian tenets.

After a considerable time spent in Barbadoes, Jamaica, and the North American continent, he returned to England in 1673. Here further persecutions awaited him. He underwent 14 months' imprisonment, and was at length liberated by the Court of King's Bench on account of the errors in his indictment. In 1677, in company with Penn and Barclay, who had joined the Society about 10 years before, he paid a visit to Holland and some parts of Germany, where his services seem to have been well received. The last 15 years of his life were tranquil as regards personal molestation, but he continued to be actively engaged in various ways in promoting the welfare of his brethren. Their persecutions continued throughout the reign of Charles II., and it was not until the first year of William and Mary that a bill was passed which nullified the Conventicle Acts, and allowed the Friends to make a solemn declaration in lieu of taking the oaths, and Fox had the gratification of seeing the public worship of the Society legally recognized before his death. He died in London, Jan. 13, 1690.

Fox, Gustavus Vasa, an American naval officer; born in Saugus, Mass., June 13, 1821. He was appointed Assistant Secretary of the Navy, and held this post till the end of the Civil War. He planned a number of operations for the navy, including the capture of New Orleans; and was sent by the government on the monitor "Miantonomoh" to convey the congratulations of Congress to Alexander II., on his escape from assassination. His visit to Russia materially aided the acquisition of Alaska by the United States, and was the longest voyage then made in a monitor. He died in New York city, Oct. 29, 1883.

Fox, John (William), an American writer of dialect stories; born about 1860.

Fox, William Carlton, an American diplomatist; born in St. Louis, Mo., May 20, 1855; was educated at Washington University, St. Louis, and at Chester Military College, Chester, Pa. He was United States vice consul-general at Teheran, Persia, organized the American Missionary Hospital during the cholera epidemic the in 1892; established and edited t only strictly diplomatic and consul journal ever attempted in the Unit States; and was a member of the G ernment Board of Management of t Pan-American Exposition, in Buffa in 1901.

Fox, William Freeman, American forester; born in Ballst Spa, N. Y., Jan. 11, 1840; was gr uated at Union College in 186 studied engineering; served in t Civil War; and subsequently to charge of the Department of Forest of New York State.

Fox Bats, the bats with fox-li heads. They are of large size, t kalong, measuring four to five f between the tips of the expand wings, and inhabit the Eastern lands, Southern Asia, and Africa.

Foxe, John, an English divin born in Boston, Lincolnshire, in 15 He studied at Oxford, but was exp led in 1545, after becoming a conv to Protestantism. His fame as author mainly rests upon his "Histo of the Acts and Monuments of Church," commonly known as "Fox Book of Martyrs." This celebra work, upon which he labored for years, was published in 1563. He d in April, 1587.

Foxglove, a genus of plants; purple foxglove. It grows to height of three or four feet, with v long spikes of numerous drooping flo ers, which are generally purple, thou occasionally white.

Fox Hound, a hound kept a trained for hunting foxes. They a smaller than the staghound, averag 22 to 24 inches in height. They va greatly in color. They possess a ve fine scent, great fleetness, and end ance.

Fox-Kane, Margaret, an Ame can spiritualist; born in Bath, Ca ada, in 1836; was about 12 years when her family were startled mysterious rappings. All endeavors trace them to any physical sou proved unavailing. Various expe ments were tried, but the "occul power refused to act save in the pr ence of Margaret and her sister Le In 1850 the two girls went to N York city, the "manifestations" me the subject of public discussion, d "mediums" sprang up all over e country. In 1888 Margaret made public exposure of her pretended manifestations," which she subse- ently contradicted. She died in rooklyn, N. Y., March 8, 1893.

Fox Shark, a shark called also the a-fox, the thresher, and the sea-ape. attains a length of about 15 feet. he resemblance to a fox is in the ngth and roughness of the tail.

Frackleton, Susan Stuart Irs.), an American artist; born in ilwaukee, Wis., June 5, 1848; be- me prominent as a ceramic artist. he won many prizes in American, uropean, Canadian, and Mexican mpetition; invented a gas-kiln for ing decorated china and glass; and as the founder and first president of e National League of Mineral Paint- s. In 1901 she received a medal at e Paris Exposition for her exhibit of ttery.

Fraction, a part of any magni- de, integer (whole number), or it. For example, "two and a frac- on" means two units and that part a unit which can be distinguished, one-half, two-fifths, and so on.

Fracture, the breaking of a bone. is divided into simple and com- und; simple when the bone only is jured; compound when the soft cov- ings are so injured that either one of e fractured ends protrudes through e skin, or the skin and muscles are lacerated as to expose the bone.

Fra Diavolo ("The Devil's broth- "), a Neapolitan robber, whose real me was Michael Pozzo; born in Itri, 1760. He began life as a stocking- aker, after which he became a friar, d in this capacity was the leader a gang of banditti in Calabria. In 99 he assisted Cardinal Ruffo, who aded the counter revolutionists in vor of the Bourbons of Naples. For is he received a pardon of his crimes d a pension of 3,600 ducats, with hich he was enabled to purchase an tate. He lived in peace till 1806, hen he rose again in favor of the ex- lled Bourbons. He entered Spa- ga, and threw open the prisons, hen he was joined by large numbers lazzaroni; but after a severe en- gement with the Bonapartists, he was taken prisoner, condemned, and executed the same year. Auber has written an opera on his adventures.

Fragonard, Jean Honore, a French painter; born in Grasse in October, 1732; died in Paris Aug. 22, 1806.

France (anciently Gallia), a maritime country in the W. of Europe, forming one of its most extensive, most populous, and most influential States.

General Description.— France is bounded N. by the German Ocean and the Straits of Dover; N. W. by the English Channel; W. by the Atlantic, more especially that part of it called the Bay of Biscay; S. by Spain and the Mediterranean Sea; E. by Italy, Switzerland, and the German territory of Alsace; N. E. by German Lorraine, Luxemburg, and Belgium. The breadth near the center is 400 miles, and along the parallel of 46° 15′, where it is narrowest, does not exceed 340 miles. The total area of France is 204,092 square miles. On taking a survey of this great country it is impossible not to be struck with the advantages it derives from its position. It not only forms a continuous and compact whole, but while protected by great natural barriers at most parts where it is connected with the continent a long line of coast on the W. and N. W. gives it immediate access to the great ocean thoroughfare, while on the S. its harbors in the Mediterranean secure to it a large share in the traffic of that important inland sea.

Before the Revolution of 1789 France was divided into general governments, or provinces. The number of these general governments has varied at different epochs. Under Francis I., by whom they were instituted, there were nine. Under Louis XIV. the number was fixed at 32, to which a 33d was added by the acquisition of Corsica, under Louis XV. In 1789 it was determined that the whole of France, including the island of Corsica, should be parceled out into departments, and each department subdivided successively into arrondissements, cantons, and communes, an arrangement which was actually carried out in 1790. The number of departments was originally 83, but it has been at different times increased and decreased. There are now 87 departments, the last formed being Haut-Rhin (Belfort).

About nine-tenths of the soil of France is productive, and about one-half of the whole French territory is under the plow. During the period 1841–1895 the production of cereals in France increased by nearly 70 per cent., while the extent of land under cereals increased by only one-quarter. The cereals forming the great bulk of the cultivated crops are wheat, oats, rye, and barley. The crops next in importance to these are meslin or mixed corn (meteil), potatoes, hemp, rape, maize, buckwheat, flax and beet. This last plant is cultivated extensively in some departments, especially in that of Nord, for the manufacture of sugar. The most valuable crops of which the cultivation on a great scale is not general, but confined to particular districts, are madder, tobacco, saffron, and hops. The cultivation of tobacco is monopolized by the government, and is confined to certain departments. It yields an annual gross revenue to the government of about $75,000,000 to $80,000,000, but from this total there needs to be deducted the expense incurred in the cultivation and manufacture of the tobacco. The breeding of stock is in France, if not imperfectly understood, very indifferently practised. The races of oxen include a few good breeds, with many more of the most inferior description. The rearing of sheep is more successful, and the fleece has in many districts been carefully and skillfully improved, and much wool, scarcely inferior to that of the merino, is raised. The general employment of cattle for agricultural purposes gives little encouragement to the rearing of draft horses; but the warlike propensities of the nation have always created an extensive demand for horses of a description adapted both for heavy and light cavalry. Considerable pains have been taken to improve such breeds by the establishment of government studs, and the rearing of them is extensively and successfully carried on. Asses and mules, generally of a superior description, are much used in France.

The cultivation of the vine is one of the most important branches of French agriculture. The total quantity of
land in vineyards is nearly a twen
fifth of the whole surface.

The wine production in the ye
1900 was 1,721,000,000 gallons,
yield that was only exceeded th
times in the previous 100 years. Fr
early in the seventies up to 1900 th
was a great demand for Americ
plants for grafting on French vin
In 1881 the total area replanted w
American vines was 21,262 acres;
1889 it was 471,000 acres, and in 19
it was 2,414,495 acres. The old vi
yards which were destroyed by t
phylloxera have been "reconstitute
as the French say, by graftings fr
the United States, and it is belie
that they are now phylloxera-pro
The acreage planted in vines in Fra
has been steadily increasing during
last 20 years, but there are reasons
believing that it has come to a sta
still.

A large part of the wealth of Fra
consists in its fruits. Among
most important fruit trees cultiva
in France are the apple, the chestn
the pear, plum, cherry, apricot, pea
orange, citron, fig, almond, etc.

The forests of France occupy ab
one-seventh part of the whole te
tory. The chief constituents
French forests are the oak, the e
the pine, the fir, the larch, the bir
the beech.

The coal fields of France are
numerous that coal mines are wor
in 33 departments; but most of th
are very limited in extent. The
nual output is over 30,000,000 tons,
falls so far short of the annual c
sumption that a large import ta
place from England and Belgium, p
ticularly the latter, and wood contin
to be the common fuel through
France, at least for domestic purpo

Though the number of iron mi
actually worked is great, the quant
of foundry pig annually produced
only about 2,500,000 tons. Few co
tries have been said to be so rich
lead as France. It occurs in grea
or less quantity in a great number
districts, and is generally argentif
ous. Manganese is very widely
fused, but is worked only in a f
mines. Gold exists both in the sa
of rivers and in situ in thin strea
embedded in quartz. Attempts h
been made to work it, but not w

ccess. A vein of quicksilver was ened about the middle of the 18th ntury, and was worked successfully r 12 years, and then abandoned. nc, copper, arsenic, nickel, and co- lt exist, but not in such quantities to be workable to profit. A large venue is also derived from quarries, d valuable beds of common clay, fine tter's earth, and kaolin.

The most important manufacture is lk, which has its principal locality at yons and is also manufactured, ough to an inferior extent, in Paris, imes, Avignon, Annonay, Tours, and her places. After it though at a nsiderable distance, follow cotton uffs, pure and mixed, woolens, in- uding broadcloths, Felle tapestry, aris linens, including fine muslin, uze, and lace, porcelain, stoneware, et root sugar, leather and the va- ous articles made of it, including oves; paper, plain and stained; hats, siery, steel, iron, brass, and zinc- ate and flint glass, etc. Besides ese a great number of articles in hich skill, taste, and ingenuity are ore especially required, have their mmon seat in the capital.

The commerce is usually divided to internal and external. The for- er is unquestionably the larger of the o, but its amount cannot be ascer- ined with any degree of exactness. he railways in France partly belong to e State and partly have been granted private companies for a limited riod, at the end of which they be- me State property. There are also rtain local lines which at the end of fixed period come into the possession the departments.

In France education in all its anches has long been taken under e special cognizance of the State, d the superintendence of it is ex- essly committed to a high function- y, who takes the name of Minister Public Instruction. The principal ucational establishments are classed der three heads — primary, second- y, and superior. At the head stands e university, which is very different om other universities, and embraces e facultes or university colleges scat- red over the whole of France in the incipal towns. Education is free d compulsory. The public schools e now all under the charge of laymen. Religion in like manner is taken under the cognizance of the State, and falls within the province of a special minister. The State places all forms of religion on an equal footing and professes to deal impartially with all by paying salaries to their ministers. With the quality of the particular religion, therefore, the State concerns itself no further than simply to know that it is not obviously subversive of social order or morals. The Roman Catholics form about 78½ per cent. of the population, the Protestants less than 2; many profess no religion.

By the law of 1872, which has been supplemented down to 1892, personal military service is declared to be obligatory. Every Frenchman 20 years old and not unfit for military service, must serve, first in the regular army (armee active) for 3 years, then in the reserve of the regular army for 10 years, next in the territorial army for 6 years, and finally in the reserve of the territorial army for 6 years. The active army and its reserves are distributed all over France, but the territorial army and its reserves are confined to fixed areas. The total strength of the regular army on a peace footing is 616,092 men, of whom 380,881 are infantry, 76,131 cavalry, 81,527 artillery, 13,426 engineers, 20,700 staff and administration, 11,418 military train, and 22,861 gendarmerie.

The navy includes 20 first-class battleships, 11 second-class, and 7 third-class; 14 port-defense ships; 51 first, second, and third-class cruisers; 250 torpedo boats, and 22 torpedo gunboats. These numbers exclude transports and non-service vessels. The navy is manned partly by conscription and partly by voluntary enlistment.

France has now a larger revenue, expenditure, and public debt than any other country in the world. The revenue for 1901 was estimated at $710,920,540, and the expenditure at $710,870,620. The total debt in 1900 was reported as $6,000,092,780.

France has been a republic since the overthrow of the second empire by a Paris mob on Sept. 4, 1870. The details of the constitution were fixed by a law dated Feb. 25, 1875, and several amendments have been enacted in subsequent years. This law places the legislative authority in the hands of a National Assembly composed of two chambers, the chamber of deputies and the senate. The chamber of deputies consists of 584 members representing the arrondissements, and the members are elected for four years by universal suffrage. The senate consists of 300 members who must be 40 years of age at least. They are elected by special bodies of delegates for nine years, one-third retiring every three years. The head of the government is a president, elected for seven years by a majority of votes of the members of the two chambers sitting as one National Assembly. No one can be a member of this body who has not undergone the legal military training.

In addition to its European territory France possesses extensive tracts in Asia and Africa, with smaller possessions in America and Oceania. These with their area and population give the French dominions an area of 4,185,213 square miles, with a total population, partly estimated, of 90,247,413.

France, Anatole, a well-known French poet and novelist; born in Paris, April 16, 1844, elected to the French Academy in 1884.

Francesco di Paula, or **St. Francis of Paola,** an Italian monk, founder of the order of the Minims; born in Paula or Paola, a village of Calabria, in 1416. Francis, notwithstanding his rigorous mode of life, attained to a great age. He died in Plessisles-Tours April 2, 1507. Twelve years after his death he was canonized by Leo X., and the Roman Church celebrates his festival on April 2.

Franche-Comte, an ancient province of France, adjacent to Switzerland and Lorraine. Its capital was Besancon, and it is now divided into the departments of Haute-Saone, Jura, and Doubs.

Francia, Jose Gaspar Rodriguez, dictator of Paraguay; born in Assuncion, in 1757. His mother was a Creole. Arrived at the proper age, he was sent to the University of Cordova, with a view to entering the Church; but his plans underwent a change while he was still a student, and on his return to his native town with the degree of doctor of la he began his public career as a barri ter. In 1811, soon after the revol tion in the Spanish possessions South America became general, D Francia, then in his 54th year, w appointed secretary to the indepen ent junta of Paraguay; and on t formation of a new congress, call in 1813, he was appointed consul the republic, with Yegros for his co league. In 1817 unlimited despot authority was conferred upon hi which he exercised during the remai der of his life. He died in Assuncio Sept. 20, 1840.

Francillon, Robert Edward, English novelist; born in Glouceste England, March 25, 1841. He deligh in realistic descriptions of scenes adventure.

Francis I., King of France; bo in Cognac, France, Sept. 12, 149 succeeded to the throne in 1515, the death of Louis XII., who di without male issue. He died at t Chateau de Rambouillet, March 3 1547, and was succeeded by his so Henry II.

Francis II., King of France, t eldest son of Henry II. and his que Catherine de Medici; born in Fontain bleau, Jan. 19, 1543. He succeed his father in July, 1559, having in t preceding year married Mary Stua daughter of James V. of Scotlan He made the Cardinal of Lorrai first minister, and his brother, t Duke of Guise, commander-in-chi The insolence and cruelty of the rule produced profound discontent, a led to the conspiracy of Amboise a the beginning of the civil war betwe the Catholics and Protestants. T states general were convoked at O leans in 1560, and the Prince of Co de, who had joined the Protestan was there arrested, and sentenced death; but the sentence was not e ecuted in consequence of the death the king soon after, in Orleans, De 5, 1560.

Francis Joseph, Charles, E peror of Austria; born in Vienn Aug. 30, 1830; ascended the thro Dec. 2, 1848. On mounting the thro his first step was to promise a fr and constitutional government to t country. The course of events, ho ver, prompted him to close the naional assembly, and to assume absoute power. He centralized the govrnments of his heterogeneous nationlities at Vienna, and inaugurated a eries of reforms favorable to the midle classes. In April, 1854, he maried the Princess Elizabeth Amalie ugenie, daughter of the Duke Maxnilian Joseph, and cousin to the King f Bavaria. The plenipotentiaries of ustria, Prussia, and Denmark assemled at Vienna to consider the terms f a peace, July 26, 1864, which was oncluded Oct. 30. The convention of astein signed Aug. 14, 1865, which ransferred the government of Schlesig to Prussia, and that of Holstein o Austria, was a few days after conrmed by the emperor and the King f Prussia at Salzburg. At the beinning of 1866, the armaments gainst Prussia commenced, and an nperial order was issued May 6, lacing the whole army on a war footig. The emperor showed much devoion in the struggle which ensued, and he fortunes of war having proved aderse, at once made peace. In 1867, he emperor put an end to the hostiliies of Hungary by reëstablishing the onstitution of that country; and was rowned at Budapest as King of Hunary. In December of the same year, new constitution was approved by he emperor, and promulgated as the undamental law of the empire. Franis Joseph has been much condemned or his cruel treatment of Hungarian evolutionary leaders, several of whom vere executed at the beginning of his eign. His brother, Maximilian, the surping emperor of Mexico, was excuted by the Mexicans, July 19, 1867. rancis Joseph's son, Crown Prince udolph, was either killed or commited suicide January 30, 1889, and his vife, Empress Elizabeth, was murered by an anarchist at Geneva, Sepember 10, 1898.

Francis, Charles Spencer, an merican diplomatist; born in Troy, . Y., June 17, 1853; was graduated t Cornell University in 1877; learned he printer's trade in the composing oom of the Troy "Times"; became n equal partner of the same with his ather in 1887; and on the death of he latter in 1897, sole owner. He was ppointed United States Minister to Greece, Rumania, and Servia in December, 1900.

Francis, Joseph, an American inventor; born in Boston, Mass., March 12, 1801; was the inventor of a number of lifeboats. He died in Cooperstown, N. Y., May 10, 1893.

Francis, Philip, Sir, an Irish-English statesman, the best accredited of the candidates for authorship of the "Junius" letters; born in Dublin, Oct. 22, 1740. The "Letters" — savage assaults on the heads of the party in power, up to George III. himself — appeared in the "Public Advertiser" of London from 1768 to 1772. He died in London, Dec. 23, 1818.

Francis, St., or **Francis of Assisi,** founder of the Order of Franciscan friars; born in Assisi in 1182. His proper name was Giovanni Bernardone, but he afterward received the name of Franciscus. He died in Assisi, Oct. 4, 1226. He was canonized by Pope Gregory IX. in 1228.

Franciscans, the designation borne by the members of the three great religious orders founded in the 13th century by St. Francis of Assisi. The first of these orders is that of the Friars Minor, known as the Greyfriars, and in France as the Cordeliers. The second order is that of the Poor Clares, called in Italian Povere Donne (Poor Ladies), and in France the Clarisses. The third order is that of Penance, or Tertiaries.

Francis de Sales, St., Bishop of Geneva, born of a noble Savoyard family, in the chateau of Sales, near Geneva, Aug. 21, 1567. He was educated by the Jesuits at Paris, studied law at Padua, and having a strong bent to theology and a religious life, entered the Church. In 1610 he founded the Order of the Visitation, of which the first directress was his friend, Madame de Chantal. He died Dec. 28, 1622; was canonized by Pope Alexander VII. in 1665.

Franck, Johann, a German hymn-writer; born in Guben in 1618. His hymns are distinguished for a fervent ecstatic quality. He died in the Niederlausitz in 1677.

Franck, Sebastian, a German prose Pietist and spiritual and ethical writer; born in Donauworth in 1499. He was a priest who enlisted warmly in the cause of the Reformation. He died in Basel, Switzerland, in 1543.

Francke, Kuno, an American educator; born in Schleswig, Germany, Sept. 27, 1855; became Professor of German Literature in Harvard University.

Francois, Luise von, a German novelist; born in 1817; died in 1893.

Franconia, a name which was originally applied to the Germany country on both sides of the Main, which was colonized by Frankish settlers under Thierry I., eldest son of Clovis I., who succeeded to his father's German possessions in 511. Conrad, Duke or Count of Franconia, was elected King of Germany Nov. 8, 911, and princes of the same house occupied the throne from 1024 till 1250. The Emperor Wenceslaus in 1387 divided the empire into four circles, and Maximilian I. in 1512 erected Franconia into a distinct circle. In 1806 it was divided among Wurtemberg, Baden, Hesse-Cassel, the Saxon duchies, and Bavaria, but since 1814 the greater part has belonged to Bavaria, where the districts of Upper, Middle, and Lower Franconia were established in 1837. Upper Franconia includes the N. E. portion of Bavaria. Middle Franconia abuts upon Wurtemberg. Lower Franconia occupies the N. W. part of Bavaria. The district is noted for its mineral springs at Kissingen, Brückenau, Orb and Wipfeld.

Franco-Prussian War. The remote causes of this war are to be sought for in the mutual jealousy which had existed between France and Prussia for some years. The immediate occasion of the war was an offer made in June, 1870, by General Prim, then at the head of affairs in Spain, of the crown of that country to Leopold of Hohenzollern, a prince belonging to the reigning house of Prussia. The war was welcomed by both sides with equal enthusiasm. The French were especially jubilant and anticipated the cries of victory by shouts of "A Berlin a Berlin!" Preparations had begun to be made by both belligerents even before the date of the formal declaration of war, and were actively carried forward on both sides. The French were the first in getting their troops to the frontier; but in this they were only apparently
in advance of the Germans, for it so
became manifest that the Fren
army, instead of being in a compl
state of readiness for war, was
fective in almost everything essent
to the equipment of an army, and th
the munitions of war and other eq
page, without which the army could
move, could not be sent after it wi
the requisite dispatch. Owing to t
prevalence of the system of paying
substitutes who never appeared a
were yet registered as belonging to t
army, it was likewise discovered th
the numbers of the army did not rea
anything like the amount represent
in the official estimates.

In Germany everything formed
complete contrast to this state of ma
ters. There the arrangements
mobilizing the army which had pre
ously been tested in Prussia, we
again found to work admirably. Ea
section of the army was complete
organized in the headquarters of t
district which it occupied in time
peace, and was only sent to the fro
tiers after being furnished with ever
thing it required. In this way t
German army, though later than t
French in reaching the scene of wa
was ready to commence active ope
tions as soon as all the sections h
arrived. In addition to this, Pruss
against which country alone the w
had been declared, was not only joi
according to treaty by all the Sta
of the North German Confederati
but also by those of the South,
whose neutrality, perhaps even up
whose alliance, Napoleon and t
French had counted. The whole
Germany N. and S. was thus in arm
and was able to muster forces far o
numbering those of the French. Wh
the whole French army brought in
the field at the commencement of t
war numbered no more than 310,0
men, the troops of the Germans in t
field amounted in all to 477,000,
which must be added strong reser
ready, with the exception of such
were necessary to protect the inter
and to resist a threatened landing
the N. coast by the French fleet, to
brought to the scene of war at a
time, giving a total strength on t
side of the Germans of more th
1,000,000 of men. In these circu
stances the result could scarcely
doubtful.

On September 1, 1870, the army of acMahon was surrounded at Sedan y a force of overwhelmingly greater umbers, and on the following day oth army and fortress surrendered y capitulation. A corps which had een raised in Paris, and sent under inoy to the assistance of Marshal acMahon, arrived too late to be of ny service, and hastily returned to aris. On this occasion 50 generals, ,000 other officers, and 84,000 private oldiers became prisoners of war. mong these was Napoleon III., who as unexpectedly found to have been resent with the army of MacMahon. e had a personal interview on the ay after the battle with King Wilam of Prussia, who assigned to him ilhelmshohe, near Cassel, as his lace of residence during his captivity.

One of the first consequences of this rushing defeat was an outburst of age on the part of the Parisians gainst the Napoleon dynasty, which n Sept. 4 was declared by Gambetta nd some members of the corps legisatif belonging to the Left to be dehroned. The same members then proeeded to the Hotel de Ville and proaimed a republic. A government of ational defense was then formed, at e head of which was placed General rochu.

The French made grand efforts to rganize new armies, and fought ravely against overwhelming numers. Paris held out much longer than en the most sanguine of the French ad at first expected. Sallies were ade at intervals by the garrison, but ot sufficiently often or in sufficient rength to have any decisive effect. n the failure of the last sally the ty which had already for about three eeks been suffering bombardment om the Germans, was in such a deserate condition that the government ould no longer help seeing that a pitulation was inevitable. The rms were settled on Jan. 28, the ief being that all the forts around aris should be immediately handed er to the Germans, and that the city hould pay a contribution of 200,000,00 francs. An armistice of three eeks was at the same time concluded, allow of the election and assembling a National Assembly to decide on ar and peace. This armistice, hower, was not to extend to the scene of war in the S. E. until a separate arrangement had been made regarding it. Here the fortress of Belfort still held out, but at last, on Feb. 16, it agreed to capitulate. The garrison, on account of its gallant defense was allowed to march out with full military honors. On the same day the armistice became general. The fortress of Bitsch (Bitche), in the department of Moselle, did not surrender till after the conclusion of the preliminaries of peace.

Meantime the elections for the assembly had taken place on the 8th. It met at Bordeaux, and on the 17th it appointed M. Thiers head of the executive, and on the 21st he arrived at Versailles along with a diplomatic commission to negotiate for peace. After the armistice had been thrice prolonged the preliminaries of peace were signed at Versailles on Feb. 26, and accepted by the assembly at Bordeaux on March 1. The principal terms were the following: (1) That France should cede to Germany one-fifth part of Lorraine, including Metz, together with the whole of Alsace except Belfort and the surrounding district; (2) that France should pay to Germany a war indemnity of five milliards of francs; (3) that certain departments of France should remain in the occupation of the Germans, and should not be fully evacuated until after the payment of the whole indemnity. The definitive treaty of peace, which was signed at Frankfort on May 10 and ratified on the 21st, confirmed in all essential particulars the preliminaries of Versailles. The last installment of the war indemnity was paid on Sept. 5, 1873, and France completely evacuated by the Germans on the 13th of the same month.

Frank, Royal Thaxter, an American military officer; born in Gray, Me., May 6, 1836; was graduated at the United States Military Academy in 1864. During the Civil War he was brevetted major and lieutenant-colonel for bravery at Fredericksburg, Dec. 13, 1862. Later was promoted colonel of the 1st United States Artillery and was in command of the Artillery School at Fort Monroe in 1888-1897. He was promoted Brigadier-General in 1898.

Frankfort, a city, capital of the State of Kentucky, and county-seat of

Frankfort county; on the Kentucky river, 65 miles E. of Louisville. The city is built on a high plain and is regularly laid out. Here are the Capitol, Court house, governor's residence, the Kentucky Military Institute, the State Home for Feeble-Minded Children, etc. On one of the hills in the vicinity of the city is a cemetery where lie the remains of Daniel Boone, several governors, and other prominent persons of the State. Pop. (1900) 9,487.

Frankfort-on-the-Main, a city of Germany, the capital of a district of same name, on the Main, 20 miles above its conflux with the Rhine. It is divided by the river into two unequal parts; the one on the N. bank, called Frankfort proper, being considerably larger than the other, which is called Sachsenhausen; and the two communicate by a stone bridge. Frankfort was formerly fortified; but most of its outworks are now converted into gardens and promenades, and it is entered by nine gates. The principal streets are wide; there are also many squares and a number of large buildings; among which may be named the Rœmerberg, or old palace, in which the emperors of Germany were elected, and place of the assembling of the Diet; the Taxis palace, a place of residence of the emperors; and the Sallhof, a modern imperial palace. Frankfort was founded by the Franks in the 5th century. Charlemagne, who had a palace in this city, summoned a council in 794, and it was surrounded with walls by Louis I. in 838. By the Congress of Vienna, in 1815, it was made one of the four free cities of Germany, and the seat of the Germanic Diet. It was made a free port in 1831. The constituent assembly, elected in 1848, held its sittings at Frankfort. It was occupied by the Prussians July 16, 1866, and is now incorporated with Prussia. Councils were held here in 794, 853, 1001, 1007 (Feb. 2), 1234, and 1400. Pop. (1900) 288,489.

Frankfort-on-the-Oder, a well-built town of Prussia, the capital of a district of the same name, province of Brandenburg, 48 miles from Berlin. Manufactures are woolens, silks, leather, earthenware, tobacco, mustard, etc. Near it is Kunersdorf, the
scene of the victory of the Austrian
and Russians over Frederick the Grea
in 1759. Pop. (1900) 61,835. Th
district has an area of 8,000 squar
miles, with a population of 1,000,00

Frankincense, a resin obtaine
from a great number of trees of th
fir species, and greatly esteemed as a
incense. The article now universall
known as frankincense is the resi
called thus, a common, inodorous art
cle, little better than common whit
resin. The article once so highly va
ued, and which, with gold and myrrl
was deemed a gift to lay before th
Saviour, must have been some othe
drug more precious than pine or spruc
resin, and was doubtless the still va
uable and beautiful substance know
as benzoin.

Frankl, Ludwig August, Chev
alier von Hochwart, an Austria
poet; born in Chrast, Bohemia, Fel
3, 1810. He died in Vienna, Marc
14, 1894.

Frankland, Sir Edward, an En
glish chemist; born in Churchtowi
England, in 1825; studied chemistr
in the Museum of Practical Geolog
and in Germany under Bunsen. H
made the discovery of the union of or
ganic radicles with metals, announcin
in 1850 the preparation of com
pounds of zinc with methyl and ethy
From this he deduced the conclusio
that an atom of the metal could onl
attach itself to a definite number c
the atoms of other elements, which dis
covery led to the theory of "equiva
lents." He was appointed Professo
of Chemistry at Owens College, Man
chester, in 1851, and there develope
the process of making water gas. Be
coming Professor of Chemistry in th
Royal School of Mines in 1865 h
turned his attention to water analy
sis, the purification of sewage and th
means of preventing pollution. Sub
sequently he proved that compresse
gases are capable of giving out a flam
of constant spectrum, from which h
concluded that the photosphere of th
sun was atmospheric. He also inves
tigated the chemistry of foods. H
died in Norway, Aug. 11, 1899.

Frankland, State of, in 178
North Carolina ceded her W. land
to the United States. The inhabitant
of East Tennessee, piqued at bein
thus disposed of, and alleging that n

rovision was made for their defense r the administration of justice, asembled in convention and took measires to form a new and independent State. Notwithstanding the fact that North Carolina, willing to compronise, repealed the act of cession the ame year, the scheme was urged forvard and at a second convention, Dec. 4, steps were taken toward the oranization of a separate State under he name of Frankland. A provisionl government was set up. John Seer was chosen governor, and the mahinery of an independent State was ut in motion. Very soon rivalries nd jealousies appeared, opposing paries arose and divided the people, and third party favoring adherence to North Carolina, led by Colonel Tipton, howed much increasing strength. Party spirit ran high. Frankland had wo sets of officers, and civil war beame imminent. Finally an armed ollision between the men under Tipon and Sevier took place. The latter vere defeated, arrested and taken to rison in irons. Frankland had reeived its death blow. The assembly f North Carolina passed an act of blivion, and offered pardon to all ofenders, whereupon the troubles eased.

Franklin, Benjamin, an Amerian statesman; born in Boston, Mass., an. 17, 1706. When 12 years old he vas apprenticed to his brother James learn the printer's trade. Three ears later James started a newspaper alled the "New England Courant." Benjamin tried his hand as a contribtor to the columns of the newspaper, nd with such success that, when his rother was arrested and imprisoned or a month by the speaker of the asembly for a too liberal exercise of his ritical faculties, the management of e paper was confided to Benjamin. The younger brother presumed peraps too much upon his success; and or this and other reasons the relaons of the two gradually ceased to be armonious, and Benjamin left Boson, drifting finally to Philadelphia, here he landed with only $1.25 in his ocket.

He was fortunate enough to find nployment immediately with a print- who had very little knowledge of his usiness, and to whom therefore Franklin's expertness and ingenuity were not long in proving almost indispensable.

An accident secured him the acquaintance of Sir William Keith, the governor of the colony, who persuaded him to go over to England for the requisite material to establish himself in the printing business in Philadelphia, by the promise to advance what money he would need for this purpose, and also to secure to him the printing for the government. Franklin arrived in London on Dec. 12, 1724. Instead of the letters of credit he expected he discovered that no one who knew Keith placed the smallest dependence upon his word. Franklin soon found employment in a London printing house, where he remained for the next 18 months. He then returned to Philadelphia, where, in connection with a fellow printer whose father advanced some capital, he established a printing house for himself. In September, 1729, he bought for a trifle the "Pennsylvania Gazette," a newspaper then only three months old, and in its columns proceeded to lay the foundation of his reputation as a journalist.

In the following year Franklin married his old love, Deborah Reed, a widow, a young woman of his own station in life, by whom he had two children, a son who died in his youth, and a daughter, Sally, who afterward became Mrs. Bache, a name since associated with the history of American science. In 1732 he commenced the publication of what is still known to literature as "Poor Richard's Almanac," which attained a circulation then unprecedented in the colonies. His contributions to it have been republished in many languages. In 1736 Franklin was appointed clerk of the assembly, in 1737 postmaster of Philadelphia; and shortly after he was elected a member of the assembly.

In 1746 he began those researches in electricity which gave him a position among the most illustrious natural philosophers. He exhibited in a more distinct form than heretofore the theory of positive and negative electricity; by his famous experiment with a boy's kite he proved that lightning and electricity are identical; and he it was who suggested the protecting of buildings by lightning conductors. At the comparatively early age of 47 he was elected to the Royal Society of London. Outside of his contributions to electrical science Franklin was the author of many other discoveries of only less importance. They are: (1) The course of storms over the North American continent — a discovery which marked an epoch in the science of meteorology, and which has since been utilized by the aid of land and ocean telegraphy. (2) The course and most important characteristics of the Gulf Stream, its high temperature, and the consequent uses of the thermometer in navigation. (3) The diverse powers of different colors to absorb solar heat.

But his electrical experiments, brilliant as they were, were only the embellishments of his greater career as a statesman and diplomatist. In 1757 he was sent to England to insist upon the right of the province to tax the proprietors of the land still held under the Penn charter for their share of the cost of defending it from hostile Frenchmen and Indians. His mission was crowned with success. He was absent on this work five years, during which he received honorary degrees from Oxford and Edinburgh. In 1764 he was again sent to England to contest the pretensions of Parliament to tax the American colonies without representation. The differences, however, became too grave to be reconciled by negotiation. The officers sent by the home government to New England were resisted in the discharge of their duty, and in 1775 patriotism as well as regard for his personal safety decided Franklin to return to the United States, where he at once participated actively in the measures and deliberations of the colonists, which resulted in the Declaration of Independence, July 4, 1776.

To secure foreign assistance in prosecuting the war in which the colonies were already engaged with Great Britain, Franklin, then in the 71st year of his age, was sent to Paris. He reached the French capital in the winter of 1776–1777, where his fame as a philosopher as well as a statesman had preceded him. His great skill and popularity, reinforced by the then hereditary antipathy of the French and English people for each other, conspired to favor the purpose of his mission. A treaty of alliance with the United States was signed by t French king Feb. 6, 1778, while o portune and substantial aids in ar and munitions of war as well money were supplied from the roy arsenals and treasury. On Sept. 1783, his mission was crowned wi success through England's recogniti of the independence of the Unit States. Franklin continued to di charge the duties of minister-plenip tentiary in Paris till 1785. F reached Philadelphia Sept. 14, 178 when he was elected almost immed ately governor of Pennsylvania wi but one dissenting vote beside his ow To this office he was twice reëlect unanimously. During the period his service as governor he was al chosen a delegate to the conventi which framed the Constitution of tl United States. With the expiratio of his third term as governor in 178 Franklin retired from public life, aft an almost continuous service of mo than 40 years. Franklin was tl founder and first president of tl Philosophical Society of Pennsylvani and an honorary member of all tl leading scientific societies of the O World. He died April 17, 1790, ar was buried in the graveyard of Chri Church, Philadelphia.

Franklin, Sir John, an Englis navigator, born in Spilsby, Lincol shire, April 16, 1786; when only boy he went to sea, and later entere the English navy. In 1806 he wa present at the battle of Trafalgar, ar in 1814 at that of New Orleans, ar in 1819 was appointed to head a overland expedition from Hudson Bay to the Arctic Ocean. After su fering many hardships and being fr quently on the verge of death fro hunger and fatigue, he reached hom in 1822. In the following year l married a Miss Purden, the daughte of an architect, and the author of se eral poetical effusions. She died i 1825. In 1827 Captain Franklin wa married a second time, and in 182 had the honor of knighthood conferre upon him. In 1845, Sir John set ou on a third expedition with two ship called the "Erebus" and "Terror, on a trip of exploration, and spent h first winter in a cove between Cap Riley and Beechey Island. After tha period many expeditions were di

atched, both from England and Amer-
ca, in search of Sir John, of whom
here were no tidings, and not till
859 were indisputable proofs obtain-
d of the death of Sir John and the
oss of his crew. It remained, how-
ver, for Lieutenant Schwatka to find
e bodies of the Franklin party in his
xpedition of 1879–1880.

Franklin, William Buel, an
merican military officer; born in
ork, Pa., Feb. 27, 1823; was grad-
ated at the United States Military
cademy in 1843. In the Mexican
Var he served on the staff of General
aylor as a topographical engineer;
as engaged in making reconnois-
nces and carried Taylor's orders at
e battle of Buena Vista. At the
tbreak of the Civil War he was as-
gned to the command of a brigade
Heintzelman's division. He took
rt in the battle of Bull Run, served
ith distinction in the Peninsular
mpaign and was promoted Major-
eneral in 1862. Subsequently he
rved under McClellan in Maryland
d under Burnside at Fredericks-
rg, was assigned to the Department
the Gulf, under Banks, in 1863;
d in 1865 was brevetted Major-Gen-
al in the regular army, but resigned
year later to engage in manufactur-
g. He was appointed United States
ommissioner-General to the Paris
xposition in 1899.

**Franklin and Marshall Col-
ge,** an educational institution in
ncaster, Pa.; founded in 1787 un-
r the auspices of the Reformed
urch in the United States.

Franklin College, a coeducational
stitution in Franklin, Ind.; founded
1834 under the auspices of the
ptist Church.

Franks, the name of a confedera-
n which was formed about 240, by
e tribes dwelling on the banks of
e Lower Rhine and the Weser, who
ited under the title of Franks or
ee men. They invaded Gaul in 256,
d for 12 years ravaged that country
d Spain, extending their incursions
far as the opposite continent of
rica. Probus drove them back into
eir native marshes in 277; but their
luence gradually increased, and
er the death of Constantine I., in
7, they constituted a powerful fac-
n at the imperial court. In 355
they again invaded Gaul, and were defeated by Julian, who permitted them to establish a colony in Brabant or Taxandria. In 418 they again invaded Gaul, where, under their leader Pharamond, they founded the modern kingdom of France.

Franks, Sir Augustus Wollaston, an English archæologist; born in Geneva, Switzerland, in 1826; died in London, May 22, 1897.

Franul von Weiszenthurn, Johanna, a German dramatist and actress; born in Grunberg, in Coblentz, in 1773. Her interpretations of stage emotions and characters made her an international celebrity; and her plays are works of great power. She died in Vienna, May 17, 1845.

Franz, Robert, a German musician; born in Halle, Prussia, June 28, 1815. He was famous for his songs, which were of a peculiar lyric beauty. His first published composition appeared in 1843. The latter years of his life were spent in editing the works of Bach, Handel, etc. He died in Halle, Oct. 24, 1892.

Franzen, Frans Michael, a Swedish poet; born in Uleaborg, in Finland, Feb. 9, 1772. He was Professor of Literature and Ethics in the University of Abo; but after the annexation of Finland to Russia he settled in Sweden, and in 1831 was made Bishop of Hernosand. He died Aug. 14, 1847.

Franzos, Karl Emil, an Austrian novelist; born in Podolia, Austria, Oct. 25, 1848; of Jewish parentage. First studying jurisprudence, he edited an illustrated paper in Vienna, and finally studied in Berlin as a man of letters. His first volume — "Semi-Asia: Pictures of Life in Galicia, Bukowina, Southern Russia and Rumania" (1876) — was a brilliant success all over Europe, being translated everywhere; and he has maintained high rank.

Frapan, Ilse, pseudonym of Ilse Levien, a German story-writer; born in Hamburg, Feb. 3, 1852. She is most at home in delineations of the life and traits of the people.

Fraser, Alexander Campbell, a Scotch philosophical writer; born in Ardchattan, Argyleshire, Sept. 3, 1819. He was a lecturer on mental philosophy in the New College, Edinburgh, 1846; editor of the "North British Review" 1850–1857; Professor of Logic in Edinburgh University.

Fraternal Societies. Many of the secret fraternal societies of the United States include in their obligations the payment of sick and death benefits, and fraternal care of the members when sick. Others are formed for the express purpose of insurance, the money for death payments being raised by assessments, the assessment rate either remaining stationary or increasing with the age of the member. The insurance is generally from $1,000 to $3,000. Another class of such societies is that in which the lodge principle prevails and which have the social features prominently kept in view. In these a stipulated sum is paid on the death of a member, and assessments are made on the death ratio. Among the largest of these organizations are the Odd Fellows, founded in 1819; Knights of Honor, 1873; Knights of Pythias, 1877; and Royal Arcanum, 1877. The insurance paid by these varies from $500 to $3,000. There are numerous other societies conducted on the same principle. According to the reports of the supreme bodies of these organizations for 1901, the membership of the principal fraternal organizations in the United States and Canada was as follows:

Odd Fellows	1,027,628
Freemasons	902,601
Modern Woodmen of America	642,957
Knights of Pythias	516,944
Ancient Order of United Workmen	420,000
Improved Order of Red Men	260,459
Woodmen of the World	252,130
Knights of the Maccabees	227,936
Royal Arcanum	226,782
Foresters of America	195,206
Independent Order of Foresters	187,000
Ancient Order of Hibernians of America	152,864
Junior Order of United American Mechanics	103,786
Benevolent and Protective Order of Elks	100,000
Ladies' Catholic Benevolent Assn.	71,668
Knights of the Golden Eagle	70,000
Tribe of Ben Hur	67,428
National Union	60,328
Knights of Honor	59,932
Knights and Ladies of Honor	53,736
Improved Order of Heptasophs	52,462
Order of United American Mechanics	47,01
Catholic Benevolent Legion	41,98
Ancient Order of Foresters	38,22
Sons of Temperance	32,67
Independent Order of B'nai B'rith	30,00
New England Order of Protection	29,12
Knights of Malta	26,00
Catholic Knights of America	24,00
Royal Templars of Temperance	23,64
United Order of Pilgrim Fathers	22,74
Brith Abraham Order	19,45
Star of Bethlehem Order	17,50
United Ancient Order of Druids	17,35
Mystic Circle	16,50
Irish Catholic Benevolent Union	14,00
American Legion of Honor	7,63
Smaller organizations not reported	42,97
Total	6,102,66

Fraternities, a voluntary associ
tion of men for promoting their con
mon interest, business or pleasure. I
this wide sense it includes all secr
and benevolent societies, the mona
tic and sacerdotal congregations, th
orders of knighthood, and also guild
trades-unions, and the like. In a lin
ited sense it is applied to religio
societies for pious practices and b
nevolent objects.

Fratricelli, Fraticelli, or **Frat
ricellians,** originally the name a
sumed in the 13th century by th
Franciscans by direction of the
founder to mark the humble charact
of their claims. Specifically, one
the names claimed in the 14th centu
as a monopoly by the section of th
Franciscans who remained true to th
rigid rules of their founder when th
majority of the order gradually we
comed some relaxation of their stri
gency.

Fraud, in law, all deceitful practic
in defrauding or endeavoring to d
fraud, another of his known right, b
means of some artful device, contra
to the plain rules of common honest
It is condemned by the common la
and punishable according to the hei
ousness of the offense. All frauds a
deceits for which there is no remed
by the ordinary course of law are pro
erly cognizable in equity, and, indee
constitute one of the chief branch
of cases to which the jurisdiction
chancery was originally confined.
fraudulent conveyance of lands
goods to deceive creditors is, as
creditors, void in law; and a frau
ulent conveyance to deceive purchase

is also, as to such purchasers, void. Where a person is party to a fraud, all that followed by reason of that fraud shall be said to be done by him. A party prejudiced by a fraud may file a bill in equity for a discovery of all its circumstances. Mere inadequacy of price alone is not a ground for a court to annul an agreement; but if there be such inadequacy as to show that the person did not understand the bargain he made, or was so oppressed that he was glad to make it, knowing its inadequacy, it will show a command over him which may amount to a fraud. If a person be fraudulently prevented from doing an act, equity will consider the act as done; and equity also relieves against bargains made under misconception of rights. In treaties, concealment of a material fact by one of the parties, in order to keep the other in ignorance, whereby to profit, is a gross fraud, and the contract will be set aside in equity. Gross criminal frauds are punishable by way of indictment or information; such as causing an illiterate person to execute a deed to his prejudice, etc. For these, and such-like offenses, the party may be punished with fine and imprisonment. Frauds are not indictable at common law unless they be such as affect the public — as vending unwholesome provisions, or using false weights and measures; these offences, however, being usually dealt with by local ordinances, or by statutes of general application throughout the State.

Frauenlob, pseudonym of Heinrich von Meissen, a German master-singer; born in 1250. He was a roving minstrel, practising his art in the courts of the princes of Southern and Northern Germany; at last he settled in Mayence, and is believed to have established there the first school of minstrelsy. His pseudonym or nickname, "Praise of Woman," he won from contending in a poetical competition for the word "lady" (frau) instead of "woman" (weib). Tradition says that women bore his corpse to the Cathedral. He died in Mayence, Germany, in 1318.

Frazee, Laurence Fisher, an American inventor; born in New Brunswick, N. J., May 22, 1813. During the Civil War he had command of the transport "Massachusetts." He was the inventor of numerous useful appliances, including a life-raft which was purchased by the United States government; the lifeboat davits in use on ferry-boats and ocean steamships; a stern paddle wheel for canal boats; a safety gangplank; etc. He died in Jersey City, N. J., Oct. 10, 1896.

Frear, Walter Francis, an American jurist; born in Grass Valley, Cal., Oct. 29, 1863; was graduated at Yale University in 1885, and at the Yale Law School in 1890; was made second judge of the first Circuit Court of Hawaii, in January, 1893, and first associate justice in the Supreme Court of the Republic of Hawaii in January, 1896. He was a member of the commission to recommend to Congress legislation for Hawaii, in August, 1898, and became chief-justice of the Supreme Court of Hawaii in July, 1900. He is the author of "Evolution of the Hawaiian Judiciary" etc.

Frechette, Louis Honore, a French-Canadian poet; born in Levis, Quebec, Nov. 16, 1839. He wrote many odes and lyrics. He was a Knight of the Legion of Honor; officer of the Academy of France, and in 1889 became clerk of the Legislative Council of Quebec.

Frederic, Harold, an American journalist and novelist; born in Utica, N. Y., Aug. 19, 1856. He was for many years London correspondent of the New York "Times." He died in London, Oct. 19, 1898.

Frederick, a city and county-seat of Frederick co., Md., 62 miles W. by N. of Baltimore. During the Civil War it was twice occupied by the Confederates, the second time, in 1864, by General Early, who forced the citizens to pay a ransom of $200,000. In 1862 Federal troops under General McClellan occupied the place.

Frederick I., surnamed Barbarossa, Emperor of the Holy Roman Empire, son of Frederick, Duke of Suabia; born in 1121, and was chosen to succeed his uncle Conrad III. in 1152. He had accompanied Conrad to Palestine five years previously, and his great qualities had already appeared. He was crowned at Aix-la-Chapelle a few days after his election. His great ambition was to secure the independence of the empire, and, above all, to be master of Italy, but after repeated efforts he gave up his attacks on the Pope and the Lombard towns. In 1188 he assumed the cross, set out in the following year on the third crusade, was opposed on the march by the Greek emperor and the sultan, arrived in Asia, and was drowned while crossing a river. Frederick was great, not only as a soldier, but as a ruler. His administration was marked by justice, his subordinate officers were chosen for their capacity and probity, he was himself an educated man and promoted education and literature. His memory is still cherished among the peasants of Germany, who dream of the return of Fritz Redbeard, as the Welsh did of King Arthur. He died in June, 1190.

Frederick II., Emperor of the Holy Roman Empire, son of Henry VI. and Constance, of Sicily; born in Jesi, Dec. 26, 1194, elected king of the Romans in 1196, again after his father's death, and a third time on the excommunication of Otho IV., in 1211. Frederick was the most accomplished sovereign of the Middle Ages; but his strong sympathies with his Italian motherland, and his unremitting endeavors to establish a compact and all supreme empire in Italy, were the causes, not only of his own misfortunes, but of the miseries which he brought on the German empire, by embroiling him in costly wars abroad, and leading him to neglect the welfare and sacrifice the interests of his German subjects. He died in Viorenzuoli, Dec. 13, 1250.

Frederick III., Emperor of the Holy Roman Empire, a title sometimes applied to the son of Albert I., who was chosen emperor by some of the electors in 1314, but was defeated by Louis of Bavaria and taken prisoner in 1322. He died Jan. 11, 1330. The Frederick III. of history, however, was the son of Ernst, and was born in Innsbruck, Dec. 21, 1415. He was elected emperor in 1440 and ruled for 53 years, the longest German reign. His sobriquet was "the Pacific," owing to his plans for the pacification of the empire. He died in Ling, Aug. 19, 1493.

Frederick V., Elector-Palatine and King of Bohemia; born in Amberg in 1596; succeeded his father, Frederick IV., in 1610. In 1618 he married the Princess Elizabeth, daughter of James I. of England, and in the following year accepted the crown of Bohemia. He made a triumphal entry into Prague, followed in 1620 by his total defeat by the Imperial forces at the battle of Prague, and the loss of his kingdom and hereditary States. He took refuge in Holland, and died in Mentz, Germany, Nov. 19, 1632. From him, through his marriage, is descended the present royal family of England.

Frederick William, generally called the Great Elector; born in 1620, and at the age of 20 years succeeded his father as Elector of Brandenburg. He is considered as the founder of Prussian greatness. He made Prussia free from feudal subjection to Poland, conquered Pomerania, joined the League against Louis XIV., and defeated the Swedes who invaded Prussia in 1647. By affording protection to the French Protestant refugees, he gained, as citizens of the State, 20,000 industrious manufacturers, and he also gave great encouragement to agricultural improvements. He founded the library at Berlin, and a university at Duisburg. He died in Potsdam, April 29, 1688.

Frederick I., first King of Prussia (Frederick III. as Elector of Brandenburg), son of the above; born in Konigsberg, July 22, 1657. He succeeded his father in 1688, and in 1701 obtained the title of king, which he had long coveted. He placed the crown on his head with his own hands. In 1694 he founded the University of Halle; two years later, the Berlin Academy of Painting; and, in 1707, he established the Academy of Sciences, Berlin, and made Leibnitz first president. He was thrice married; his third wife became insane, but her state was concealed from him. One day she escaped, rushed into the king's apartment, smashing the glass door, and so terrified him that he immediately fell into a fever, and after six weeks' illness died, Feb. 25, 1713.

Frederick William I., son of the above, and father of Frederick the Great; born in 1688, and commenced his reign in 1713, after having married the daughter of the Elector of

Hanover, afterward George I. of England. In 1715 he declared war against Charles XII. of Sweden, and in conjunction with Denmark took Stralsund; but on the death of Charles, in 1718, he made peace. The habits of this sovereign were entirely military. One of his strongest peculiarities was an extraordinary love for tall soldiers. He held science and literature in profound contempt; but money he worshipped, and men of a military character after his own ideal he respected and encouraged. He died May 31, 1740.

Frederick II., best known as Frederick the Great; born Jan. 21, 1712; the son of Frederick William I., and the Princess Sophia Dorothea of Hanover. Though, by the direction of his father, he was instructed only in the details of military exercises and service, his taste for poetry and music was early developed by the influence of his first instructress, the highly gifted Madame de Rocoules, and his early teacher, Duhan, who, countenanced by the queen, formed a secret opposition to his father's system of education. The death of his father raised him to the throne May 31, 1740. Frederick on his accession found in his States a population of only 2,240,000. At his decease he left 6,000,000. He raised Prussia to this pitch of greatness by his talents as a legislator and general, assisted in the field and in the cabinet during a reign of 46 years by many distinguished men. The story of his wars would be a history of Europe. But he was not alone a great commander. He encouraged agriculture, the arts, manufactures, and commerce, reformed the laws, increased the revenues, perfected the organization of his army, and thus improved the condition of the State. He died in Sans-Souci, Aug. 17, 1786, in the 75th year of his life, and the 47th of his reign, and left to his nephew, Frederick William II., a kingdom increased by 29,000 square miles, more than 70,000,000 Prussian dollars in the treasury, an army of 200,000 men, great credit with all the European powers, and a State distinguished for population, industry, wealth, and science. Frederick the Great was an admirer of General Washington, whose abilities he perceived and did not hesitate to acknowledge — a fact which Americans will always remember. The present German emperor has presented to the United States a statue of Frederick the Great.

Frederick William III., King of Prussia, son of the above; born Aug. 3, 1770; commenced his reign in 1797 by maintaining a strict neutrality in the various alliances with and against France, which resulted from the ambitious designs of Napoleon I. In 1805, however, he yielded to the solicitations of Russia, allying himself with the czar against the French emperor. The rapid campaign of 1806, and the defeat of the Prussians at Jena, opened the gates of Berlin to the enemy, in whose hands it remained till 1809. In 1807 the battle of Friedland led to the humiliating peace of Tilsit, by which Frederick lost half his dominions. Forced, in 1812, to contribute a force of 30,000 men to Napoleon's army, he subsequently joined his troops with those of Russia. The allies having triumphed over the French at Leipsic, Frederick William, in 1814, entered Paris with Czar Alexander. He also accompanied the latter to England in the same year. On the return of Napoleon from Elba, he once more joined the allies. After the victory of Waterloo, in which the Prussians, under Blucher played an important part, Prussia, once more at peace, gradually recovered the losses she had sustained, under the wise and paternal sway of Frederick. He died June 7, 1840.

Frederick William IV., King of Prussia, son of the preceding; born Oct. 15, 1795; on the death of his father, succeeded to the throne in 1840. He served, as a simple officer, in the campaigns of 1813 and 1814, and evinced, at an early period of his life, a very great love for the arts, which he preserved throughout his career. During the first years of his reign his subjects anxiously demanded the reform of the government, requiring the liberal constitution which had been promised them in 1815, in return for the great sacrifices they had made during the continental war. In 1847, at a general diet of the Prussian States, many of these reforms were granted. In March, 1848, however, the people and the troops came into collision, the king was obliged to change the ministry, to issue a general amnesty, and commence a war in favor of Schleswig against Denmark, and to salute from his balcony the corpses of the insurgents. The mingled irresolution and absolutism of Frederick, however, led him subsequently to other conflicts in June and August of the same year; and it was not till two coups d'etat that Frederick, assisted by his army, succeeded in retaining his authority almost unimpaired by the powers he had yielded. Toward the end of 1857, a severe illness, resulting in the loss of some of his faculties, caused his brother William to be nominated regent, who succeeded him as king on his death, near Potsdam, Jan. 2, 1861.

Frederick III. 2d Emperor of Germany, and 8th King of Prussia; born in Potsdam, Prussia, Oct. 18, 1831; was educated at Bonn University; entered the army; became Crown Prince of Prussia in 1861; served with distinction in the Danish War; conducted a brief but brilliant campaign in the war between Prussia and Austria; and at the outbreak of the Franco-Prussian War was placed in command of one of the three divisions of the German army. After the war he received the Iron Cross and numerous other orders in recognition of his services against the French. In 1871 he became Crown Prince of the German Empire, in which capacity he manifested a keen interest in the development of the new empire and in scientific, industrial, and patriotic undertakings, the building of the Kaiser-Wilhelm-Stiftung for invalid soldiers and the excavations at Olympia, being notable instances of his activity. The death of Emperor William I. on March 1, 1888, made him Emperor of Germany and King of Prussia. He assumed the title of Frederick III. He was suffering with cancer in the throat at the time of his accession, and died in Potsdam, June 15, 1888.

Fredericksburg, a city in Spottsylvania co., Va.; on the S. bank of the Rappahannock river; 61 miles N. of Richmond. It is situated in a valley surrounded by high hills. It was the scene of several battles during the Civil War.

Fredericksburg, Battle of. On Dec. 13, 1862, General Burnside crossed the Rappahannock river at Fredericksburg, and attacked the Confederates, who, under General Lee, occupied a strong position on the heights. The Union forces were estimated at 100,000 men, and the Confederate at 80,000. The battle, after raging with desperate violence through the day, terminated in the defeat of General Burnside. Little fighting took place Dec. 14 and 15, and on Dec. 16 the Union forces recrossed the river with opposition. The Union loss was 1,138 killed, 9,105 wounded, and 2,078 missing; while the Confederate loss amounted to 595 killed, 4,061 wounded, and 653 missing.

Fredericq, Paul, a Belgian historian; born in Ghent, Aug. 12, 1850.

Fredro, Count Alexander, a Polish dramatist, called "the Moliere of Poland"; born in Suchorow, in Galicia, in 1793. He was the founder of Polish comedy. He died in Lemberg, July 15, 1876.

Free Church, a name often given by English Nonconformists to the Christian denominations in England free from State patronage and control. In ecclesiology and English Church history, an association which has for one object to abolish in the Church of England pew rents as well as pews, allowing no ownership in the latter to be claimed by individual members of the congregation, but maintaining the equal right of all parishioners to the free use of seats in churches.

Free Church of England, an evangelical Protestant denomination founded on the basis of recognizing only two orders — the first being presbyters, and the second deacons. "Nevertheless, the first order is divided into two distinct offices, viz., bishops and presbyters. This Church maintains the ecclesiastical parity of presbyters, whether episcopally or otherwise ordained." The governing body is the Convocation, consisting of all the clergy and laity in the several churches.

Free Church of Scotland, the name assumed by the large number of ministers and their adherents who left the Scottish Establishment at the "Disruption" of May 18, 1843. They had seceded in vindication of what they called the "Headship of Christ," i. e., to gain liberty to obey what they deemed the will of their Divine Lord in all Church arrangements.

Free Companies, bands of discharged soldiers, who ravaged France after the conclusion of the peace of Bretigny, May 8, 1360. Bertrand du Guesclin, born in Brittany in 1314, put himself at their head, and led them against Peter the Cruel, King of Castile, whom he dethroned in 1365, placing Henry, Count of Trastamara, on the throne. Edward the Black Prince recalled the free companies, defeated Henry at Najara, April 3, 1367, and restored Peter the Cruel, who was, however, defeated March 14, 1369, and killed by Henry of Trastamara, March 23.

Freehold, an estate or real property held in fee simple in America, or in England either in fee simple or fee tail; the tenure by which such an estate is held.

Freeman, Edward Augustus, an English historian; born in Harborne, in Staffordshire, Aug. 2, 1823. His first publication (1849) was a "History of Architecture," especially devoted to Gothic architecture. His architectural researches helped to turn his attention to history, but his earliest works were the product of his interest in contemporary questions. He was appointed Professor at Oxford, 1884. His contributions to the periodicals of his day were frequent and of great weight; and he was a fiery and unvarying champion of national freedom. He died in Alicante, in Spain, March 16, 1892.

Freemason, a member of an ancient secret order or fraternity now designated as "Free and Accepted Masons." The order is of such ancient origin that even the derivation of its name is in doubt. By a majority of the authorities it is held that the word "free" is to be taken in the sense of one who is free of the masons' guild. But the most reasonable theory is that the name owes its origin to the practice of the ancient masons of giving the passed apprentice his freedom as he was sent forth to seek employment on some great and worthy structure in process of erection to complete his mechanical education. It was early in the 17th century that the word was first used in the sense in which it is now universally understood. At that time the ancient guilds of practical masons began to admit as a mark of especial esteem certain worthy persons whom it was intended to honor, not regular members of the guild through apprenticeship and occupation. To these was given the appellation "accepted." They were afterward given the title of "freemasons" also, inasmuch as they were admitted to a full membership in the guild and were duly acquainted with all its secrets. In the year 1717 J. T. Desaguliers, a man of scientific knowledge and attainments, brought a number of scattered "lodges" or guilds of London under a single jurisdiction called the "Grand Lodge," and it is to this ancient and august body that all the regular lodges of the ancient craft today trace their origin. The first Provincial Grand Lodge in America was established at Boston in 1733 by Henry Price, who, in 1734, was made Grand Master over all of North America. The order has attained a remarkable growth throughout the world, and especially in the United States and Canada, the returns of the grand lodges of these two countries for 1901 showing a membership of 902,601.

Freethinker, a name often assumed by those who, disbelieving in revelation, feel themselves free to adopt any opinion in religious or other matters which may result from their own independent thinking. The name was specially claimed by those who in the 17th and 18th centuries took part on the anti-Christian side in the deistic controversy.

Free Trade, the term applied to national commerce when unrestricted by laws or tariffs, and not unduly stimulated by bounties. As an economic principle, free trade is the direct opposite to the principle or system of protection, which maintains that a State can reach a high degree of material prosperity only by protecting its domestic industries from the competition of all similar foreign industries. To effect this, countries either prohibit the importation of foreign goods by direct legislation, or impose such duties as shall, by enhancing the price, check the introduction of foreign goods.

Freewill, free will, freedom and necessity, liberty and necessity, terms employed to denote the power of a man over the determination of his own will, one of the most difficult questions in the whole field of mental sciences.

Freezing, Congelation, or **Solidification,** the transformation of a liquid into a solid under the influence of cold. Each liquid always solidifies at the same temprature, which is called its freezing point, and the solid also melts again at the same temperature. Thus the freezing point and the melting point, or point of fusion, are the same, and the point is always the same for the same substance.

Freiberg, a mining town of Saxony, 19 miles from Dresden. It is the capital of the mining district of Saxony, and contains a mining academy founded in 1765, with 13 professors, fine scientific collections, among which is the celebrated collection of precious stones amassed by Werner, and a large library. There is a fine relic called the Golden Portal belonging to the ancient Church, which stood on the site of the Gothic cathedral. It is an ancient imperial city, and is still surrounded by the old walls and ditch. The town owes its origin to the discovery of silver mines in the 12th century. In the 17th century it had great wealth and a population of 40.000. It is said to have about 150 mines of silver, copper, lead, and cobalt in its vicinity; but their product has lately fallen off. The manufactures are chiefly metal ware, feather goods, pigments, etc. Here, on Oct. 29, 1762, Prince Henry of Prussia defeated the allied Austrian and Saxon army. Pop. (1900) 30,175.

Freiburg, or **Fribourg,** a canton of Switzerland, between the canton of Berne and the Pays de Vaud. Freiburg is finely diversified with every kind of scenery, comprising wooded or grassy hills, Alpine mountains, and long and beautiful verdant valleys. Of the population, seven-eighths are Roman Catholics; the Protestants, about 8,400, reside principally in the district of Morat. Pop. (1900) 127,751. Its capital, of the same name, occupies a singularly wild and romantic situation on the Sarine, 16 miles from Berne.

Freiburg in Breisgau, a town of Germany, Grand-Duchy of Baden; 32 miles N. N. E. of Basel. It is an open, well-built town; the walls and ditches with which it was formerly surrounded have been converted into promenades and vineyards. The cathedral, one of the most beautiful and perfect specimens of Gothic architecture in Germany, cruciform in shape, and built of red sandstone, was begun in 1122, but not completed till 1513. Its W. steeple, 381 feet high, is remarkable for its elegance and lightness. The university was founded in 1455. Freiburg was founded in 1091 by the Duke of Zahringen, and created a town in 1115. Freiburg has repeatedly changed masters; twice it was given over to France. It also played an eventful part in the Thirty Years' War. In 1806 it fell to Baden; and in 1848 the Baden revolutionists were defeated here by the troops of the German confederation. Pop. (1900) 61,506.

Freight, formerly a charge paid to the owner of a ship for the carriage and safe delivery of goods; but the term now extends to transportation by land, especially on railroads, and also to the goods that are shipped. In cases of maritime freight, a person chartering a ship pays freight for the goods sent by it, and dead freight in respect of any deficiency of cargo; the terms of the agreement are fixed by the charter party. A person sending goods by a general ship pays freight for them; and the contract takes the form of a bill of lading.

Freiligrath, Ferdinand, a German poet; born in Detmold, Germany, June 17, 1810. His first volume of "Poems" (1838), won a royal pension, which he renounced as discrediting his liberalism, publishing a "Confession of Faith" in verse (1844). Banished as a sower of sedition, he took refuge in London till the Revolution of 1848. Returning, he was tried for high treason for his poem "The Dead to the Living," but acquitted; then threatened with prosecution for "Political and Social Poems." From 1851 till 1867 he again resided in England as manager of a Swiss banking establishment. He was deprived of this post by the failure of the bank, whereupon a national subscription was got up in his behalf in Germany, which enabled him to return to private life. Many of his songs are widely popular. He was an admirable translator, notably from Scott, Shakespeare, and Longfellow. He died in Cannstatt, Germany, March 18, 1876.

Frelinghuysen, Frederick, an American lawyer; born in Somerset co., N. J., April 13, 1753; was graduated at the College of New Jersey in 1770. He was a member of the Continental Congress much of the time during the Revolutionary War; served as a captain in the army; filled various State and county offices; led an expedition against the Western Indians in 1790; and was United States Senator in 1793-1796. He died April 13,1804.

Frelinghuysen, Frederick Theodore, an American statesman; born in Millstone, N. J., Aug. 4, 1817; was graduated at Rutgers College in 1836; and became an eminent lawyer. He was attorney-general of New Jersey in 1861-1866; United States Senator in 1868-1877; and Secretary of State under President Arthur in 1881-1885. He died in Newark, N. J., May 20, 1885.

Frelinghuysen, Theodore, an American lawyer; born in Millstone, N. J., March 28, 1787; was graduated at the College of New Jersey in 1804; and admitted to the bar in 1808. In the War of 1812 he commanded a company of volunteers, and in 1829 was elected United States Senator. He was chosen chancellor of the University of New York in 1838; was nominated for Vice-President of the United States in 1844; and in 1850 became president of Rutgers College. He died in New Brunswick, N. J., April 12, 1862.

Fremont, Jessie Benton, an American author, wife of John Charles; born in Virginia in 1824; daughter of Senator Thomas H. Benton.

Fremont, John Charles, an American general and explorer, popularly known as "The Pathfinder of the Rocky Mountains"; born in Savannah, Ga., Jan. 31, 1813, of a mixed French and Virginian parentage. In 1838-1839 he undertook the exploration of the country between the Missouri river and the British frontier, and in 1838 received a commission as 2d lieutenant in the corps of topographical engineers. Shortly afterward, he proposed to the government to undertake the exploration of the Rocky Mountains — at that day a terra incognita. His plan being approved, he, in 1842, started with a handful of picked men, and reached and explored the South Pass. Not only did he fix the locality of that great defile through which thousands have since found their way to California, but he defined the astronomy, geography, botany, geology, and meteorology of that region, described the route since followed, and designated the points upon which a line of United States forts were subsequently erected. In 1845 he cleared the N. part of California of Mexican troops, and then, seeking a broader field of activity, planned an expedition to the distant territory of Oregon. He approached the Rocky Mountains by a new line, scaled the summits S. of the South Pass, deflected to the Great Salt Lake, pushed investigations right and left his entire course, and at the same time connected his survey with that of Commodore Wilkes' exploring expedition. In this daring expedition he crossed 3,500 miles of country in sight of eternal snows, discovering the grand features of Alta California, its great basin, the Sierra Nevada, the valleys of San Joaquin and Sacramento, and determined the geographical position of the W. portion of the North American continent. In 1846 he was promoted lieutenant-colonel and also military commandant and civil governor of the Territory of California, in which capacity he in 1847 concluded those articles of capitulation by which Mexico conceded exclusive possession of that territory to the United States. In the same year he purchased in California the valuable Mariposa estate upon which he settled in 1849. In 1853 he undertook a fifth expedition across the continent, made new discoveries, and reached California after enduring almost incredible hardships. In 1856 he was the first candidate of the Republican party for the presidency; and in 1861, on the outbreak of the Civil War, was appointed a Major-General of volunteers. He then, as commander of the western Union army, marched into Missouri with the view of encountering General Price's Confederate force then in possession of that State, but an unfortunate dispute with a subordinate officer caused the War Department to relieve him of his command. He was governor of Arizona in 1878-1881. He died in New York city, July 13, 1890.

French, to crush the fiber of meat so as to make tender. This word is one peculiar to the great butchering centers of the Northwest, and it is applied to the operation of cutting meat in a direction transverse to the muscular striæ and then flattening it out into a thin layer by beating it with the flat side of a cleaver. Pork tenderloins and kindred portions of meat are usually thus treated.

French, Daniel Chester, an American sculptor; born in Exeter, N. H., April 20, 1850; was educated in Boston and in Florence, Italy; had studios in Boston and Concord, N. H., in 1878-1887, and in New York city in 1887-1900.

French, L. Virginia (Smith), an American poet; born on the E. shore of Maryland in 1830; she was associate editor of the "Southern Lady's Book," a fashion magazine, published in New Orleans (1852). She died in McMinnville, Tenn., March 31, 1881.

French Horn, in music, a wind instrument, consisting of a long tube twisted into several circular folds, gradually increasing in size from the mouth piece to the bell, or end at which the sound issues.

French School, in painting, a school that has been so different under different masters, that it is difficult to characterize it. Speaking in general terms of this school, it appears to have no peculiar character, but unites in a moderate degree the different parts of the art, without excelling in any one of them. Modern French artists have especially excelled as painters of the nude figure.

Freneau, Philip, an American poet; born in New York city, Jan. 2, 1752. His connection with Jefferson and other men of the time made him conspicuous. He died near Freehold, N. Y., Dec. 18, 1832.

Frenzel, Karl Wilhelm, a German author; born in Berlin, Germany, Dec. 6, 1827. He has published several volumes of historical essays and novels.

Frerichs, Friedrich Theodor, a German physician; born in Berlin in 1819. In 1851 he went as Professor of Pathology and Therapeutics to Breslau, where he became also director of the medical clinic. In 1859 he was called to succeed Schonlein in Berlin as director of the medical clinic in the Charite Hospital. His principal work, however, is "Klinics of Diseases of the Liver," with atlas — which has been translated into the French, English, and Italian languages.

Fresco, a kind of painting performed on fresh plaster, or on a wall covered with mortar not quite dry, and with water colors. The plaster is only to be laid on as the painting proceeds, no more being done at once than the painter can dispatch in a day. The colors, being prepared with water, and applied over plaster quite fresh, become incorporated with the plaster, and retain their beauty for a great length of time.

FRESCO CEILING.

Fresenius, Karl Remigius, a German chemist; born in Frankfort-on-the-Main, Dec. 28, 1818; was Professor of Chemistry at Wiesbaden; and in 1862 founded the "Journal of Analytical Chemistry."

Fresnel, Augustin Jean, a French physicist; born in Broglie, France, May 10, 1788. In 1815 he became distinguished as the discoverer of the polarization of light, and in 1823 was elected a member of the Academy. He made important researches respecting the wave theory of light. The result of his great discovery is shown in the system of lens lighting apparatus, which has changed the mode of lighthouse illumination over the whole world, and is universally known as the "Fresnel system." In 1825 Fresnel was elected F. R. S. of London, and in 1827 received the Rumford medal of the society. He died near Paris, July 14, 1827.

Freshwater Formation, in geology, a stratum or a series of strata deposited in fresh water. If this is done by a river they are fluviatile; if by a lake they are lacustrine. Most freshwater strata belong to the latter category.

Frey, Adolf, a German author; born Feb. 18, 1855.

Frey, Jakob, a Swiss novelist; born in Gutenschwy, Switzerland, May 13, 1824.

Freyer, John, an English linguist; born in Hythe, England, Aug. 6, 1839; was graduated at Highbury College in 1860; professor of Alfred University, Hong-Kong, China, in 1861; Professor of English in Tung-Wen College, Peking, China, in 1863–1865; and for many years was employed by the Chinese government in the translation of scientific and technical books into Chinese. He was the author of a large number of essays and reports in the Chinese language, and was appointed Professor of Oriental Languages and Literature in the University of California, in 1896.

Freylinghausen, Johann Anastasius, a German theologian; born in Gandersheim, Germany, Dec. 2, 1670. His work on the "Foundation of Theology" is the masterpiece of the Pietist movement of Halle. He died in Halle, Prussia, Feb. 12, 1739.

Freytag, Gustav, a German author; born in Kreuzburg, Prussia, July 13, 1816. Among his works outside of the drama may be mentioned "Ancestors," a cycle of six stories portraying the German civilization from the beginning of historic times; and "Charlemagne" (1894). He died in Wiesbaden, Germany, April 30, 1895.

Friar, any religious of the male sex belonging to a monastic order. The term is used specifically for religious belonging to one of the four mendicant orders for men: (a) The Franciscans, or Friars Minors, popularly called Gray Friars; (b) the Dominicans, or Preaching Friars, popularly called Black Friars; (c) the Augustinians; (d) the Carmelites, popularly known as White Friars.

Friar Bird, a bird, so called because its head and neck are bare of feathers. There is a tubercle at the base of the bill. It is found in Australia. It is called also the monk, the leather head, the poor soldier, the pimlico, and four o'clock.

Fric, Joseph Vaclav, a Czech author; born in Prague, Austria, Sept. 5, 1829. Political activity and journalistic independence resulted in his exile, but he was granted amnesty after wandering through Europe and writing anti-Austrian books and papers. He died in Prague, Oct. 14, 1890.

Friedlander, Ludwig, a German classical scholar; born in Konigsberg, Prussia, July 24, 1824. His most representative work is "Typical Studies in the History of Roman Manners and Morals" (6th edition 1889), written in popular style.

Friedmann, Alfred, a German poet and story-teller; born in Frankfort-on-the-Main, Prussia, Oct. 26, 1845.

Friedrich, Friedrich, a German novelist; born in Grosz-Vahlberg, Little Brunswick, Germany, May 2, 1828. He died in Plauen, near Dresden, Saxony, April 13, 1890.

Friedrichs, Hermann, German author; born in St. Goar on the Rhine, Germany, June 14, 1854.

Friendly Suit, in law, a suit instituted between two parties who are not really at variance, to obtain a judicial decision upon a certain point.

Friends, Society of, the organization commonly called Quakers, founded in the middle of the 17th century by George Fox. They are distinguished from other Christian bodies by the special stress they lay on the immediate teaching and guidance of the Holy Spirit, and their belief that no one should be paid or appointed by human authority for the exercise of the gift of the ministry. In obedience to this belief they hold their meetings without any prearranged service or sermon, and sometimes in total silence. The Friends believe that the sacraments of Baptism and the Lord's Supper are to be taken spiritually, and not in an outward form. Their protests against the use of oaths and against the exaction of tithes and church rates cost them much suffering and frequent imprisonment during the first 50 years of their existence. The simplified dress which Friends adopted from conviction 200 years ago became stereotyped into a uniform. This dress has generally been given up, as have the "testimony" against music and singing in its rigid application, and the peculiarities of speech, such as the use of "thee" and "thou" instead of "you" (though many Friends still retain this custom among themselves), and the avoidance of all titles of courtesy. Of late years there has been a very decided evangelical movement among Friends, under the influence of which the old quietism is dying out. As a result of this change the influence of the Society beyond its own borders, through home and foreign missions and adult First Day (Sunday) Schools, has developed to a remarkable extent. There is in the United States a numerous body of Friends called Hicksites (from their founder, Elias Hicks), who separated from the orthodox community. They hold latitudinarian views. The Wilburite section are conspicuous in Pennsylvania by their adherence to the livery and the "plain language." Large numbers of persons who do not appear in the statistical returns attend the Mission meetings of the Society of Friends, and very large numbers come under their influence in the foreign mission field.

Fries, Elias, a Swedish botanist; born Aug. 15, 1794, in Smaland, Sweden, and studied at Lund, where he early taught botany. In 1834 he was called to the chair of practical economics at Upsala, with which in 1851 that of botany was conjoined. In 1851 Fries was appointed director of the botanical museum and garden at Upsala, and in 1853 rector of the university. He resigned in 1857, and died in Upsala, Feb. 8, 1878.

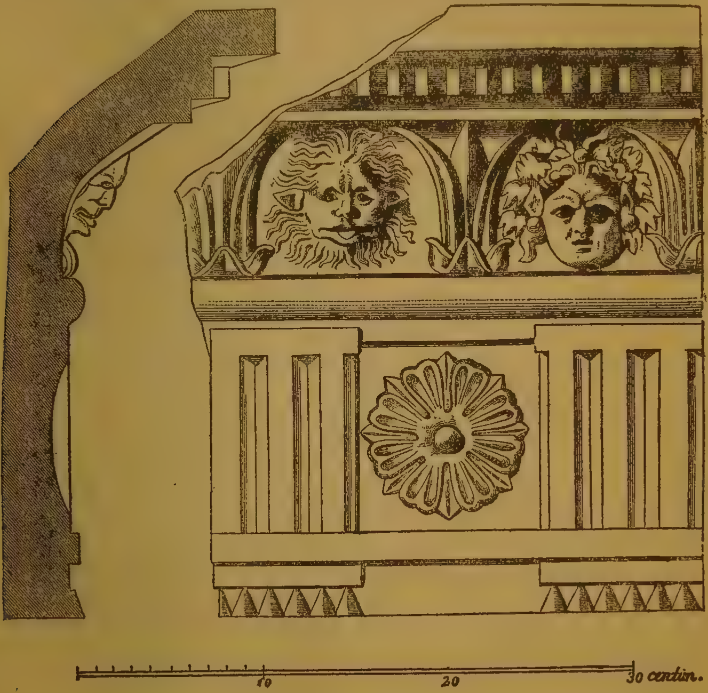
Fries, Jacob Friedrich, a German philosopher; born in Barby, Prussia, Aug. 23, 1773. He is a link between Kant's system and the so-called historical school. He died in Wartburg, Germany, Aug. 10, 1843.

Frieze, in architecture, that portion of the entablature which is between the architrave and the cornice. It was generally adorned with triglyphs in the Doric order, the intervening spaces, called metopes, being filled with sculptured figures in alto-relievo, or with the skulls of oxen and wreaths alternately; while in the Corinthian and Composite orders it was ornamented with figures or scroll work in low relief, extending along its entire length. The term frieze was also applied to a broad band of sculpture, in low relief, that was frequently placed round the cella of a Grecian temple, immediately under the ceiling of the portico, and completely surrounding the exterior. In modern domestic architecture a frieze is frequently introduced immediately below the cornice of an apartment.

FRIEZE, DRONTHEIM.

Frigate, originally a Mediterranean vessel propelled by sails and oars; afterward a ship of war, between a sloop or brig and a ship of the line. Such vessels generally carried from 30 to 50 guns on the main deck and on a raised quarter desk and forecastle. They were usually employed as cruisers or scouts. The name is now given to a vessel of war having an upper flush deck, and one covered gun deck. The armament is from 28 to 44 guns.

Frigate Bird, a genus of natatorial birds. They have a long and forked tail, and an expansion of wings sometimes reaching 10 or 12 feet. They abound on both the Atlantic and Pacific coasts of tropical America. They are called also man-of-war birds.



FRIEZE, ROMAN-DORIC.

Frigid Zones, the two cold zones or imaginary belts encircling the world. The northern has the North Pole for its center and the Arctic Circle for its circumference. Similarly the southern has the South Pole for its center, and the Antarctic circle for its circumference. Within these limits there is but one day and one night in the year, each nominally six months in duration, but the day is really considerably longer than the normal amount, owing to the influence of refraction in keeping the sun above the horizon. The intense cold of winter covers every land within the limits with glaciers and congeals immense expanses of every sea. The heat of summer, on the contrary, is much above what might be expected, for, though the solar beams are very oblique, yet, continuing for half a year without intervals of night, they produce great effects. It is a geological problem how plants, now found fossil in the polar latitudes, managed to pass undestroyed through the long winter. The frigid is called also the frozen zone.

Fringillidæ. Finch and sparrow family. We mention two species, as illustrations of the family. The Arkansas finch of the Southern Rocky Mountains to the coast of California, is 4¼ inches long; the wing, 2 2-3 inches; the upper parts olive-green, the head, wings, and tail black; beneath, bright yellow. The common sparrow, the true type of the finch tribe, is a European bird, one of the most omnivorous of all birds, and has been lately successfully introduced into this country. It is nearly six inches in length, of a robust form; bill dusky; eyes hazel; the top of the head and back part of the neck ash gray; the throat, fore part of the neck, and space around the eyes black; the cheeks whitish; the breast and all the under parts pale ash; the back, scapulars, and wing coverts are reddish-brown, mixed with black the latter tipped with white, forming a light bar across the wing; tail brown, edged with gray, and rather forked; legs pale brown. The plumage of the female is plainer and duller than that of the male; beyond each eye there is a line of white, and she has no black patch on the throat. Sparrows are bold and crafty; and their partiality to the homes of man does not originate from any social affection on their part, but because their chief subsistence is there most abundantly to be found.

Friis, Jens Andreas, a Norwegian philologist born in Sogndal, in 1821. He exhaustively investigated the language and literature of the Finns and Lapps; a "Lapp Grammar" (1856), "Lapp Mythology" (1871), and like works, giving him preëminence in this field. "Holidays among Crags and Mountains" (1876) — hunting and fishing sketches, with the mountains of his country as a background — give another side of his literary power.

Frisians or **Frisii** (later called Frisones), an ancient Germanic people, who inhabited the extreme N. W. of Germany, between the mouths of the Rhine and Ems, and were subjected to the Roman power under Drusus. They were subdued by the Franks, and, on the division of the Carlovingian empire, their country was divided into West Frisian (West Friesland), and East Frisian (East Friesland). The language of the Frisians is intermediate between the Anglo-Saxon and the Old Norse. Our knowledge of the old Frisian is derived from certain collections of laws; as the "Asegabuch," composed about 1200; the "Brockmerbrief," in the 13th century; the "Œpnsiger Domen," about 1300, and some others.

Frith, William Powell, an English painter: born in Studley, England, in 1819; became a Royal Academician in 1853; received the decoration of the Legion of Honor in 1878; honorary member of the principal art academies in Europe.

Frobisher, Martin, an English navigator; born in Doncaster, Yorkshire, England, about 1536; was a mariner by profession. In search of a N. W. passage to India and under the patronage of the Earl of Warwick, he set sail with a fleet of three vessels from Deptford in June, 1576. After exploring different parts of the Arctic coast, and entering the strait that bears his name he returned to England, bearing with him some black ore which is said to have been gold. In consequence of this discovery he was encouraged to make two more journeys, both of which proved fruitless. On board the "Triumph" he took part in the destruction of the Spanish Armada and was knighted for his bravery. In 1594 he served under Henry IV. of France against the Leaguers and Philip II. of Spain, and while attacking a fort near Brest received a mortal wound. He died in Plymouth, England, Nov. 7, 1594.

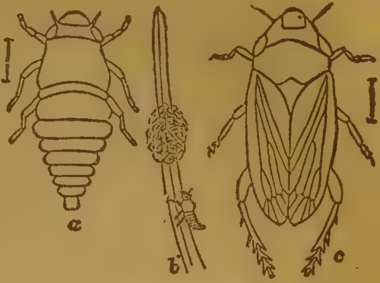
Frobisher Strait, a passage between the W. side of Davis Strait and the N. side of Hudson Strait, is 140 miles long, with an average breadth of 20. It is not of any practical value as a channel of communication. It was discovered in 1576 by Sir Martin Frobisher, an energetic English navigator.

Froebel, Friedrich, a German educator; born in Oberweissbach, April 21, 1782. He was for some time associated with Pestalozzi, but evolved a theory of education of his own. To explain it he wrote "The Education of Man" (vol. i. 1826), a work of deep and original thought. He opened the first kindergarten or children's garden at Blankenburg, Thuringia, in 1840. He died in Marienthal, June 21, 1852.

Frog. The genus is distinguished from its congeners by having the tongue and tympanum distinct, the skin smooth, and the toes without claws; they are, however, pointed, and the hinder feet are united almost to the tips by a membrane. The species are numerous; they are widely distributed over the globe, many inhabiting tropical regions. The common frog is too well known to require description. It is found at the genial period of the year, burying itself at the approach of winter, in the mud at the bottom of ponds, and reappearing early in spring. In the month of March it lays its eggs, which are enveloped in a gelatinous material, in water, where they float. Each female deposits from 600 to 1,200 eggs a year. By April they have greatly increased in size and are becoming hatched. The immature frogs which come forth are called tadpoles. They have tails, no legs, breathe by gills, and are aquatic. Six or eight weeks later the legs are fully developed, the tail is absorbed, and they quit the water, remaining, however, in its vicinity to the last. The common frog is found in most parts of this country, in Europe, in parts of Asia, and in the N. of Africa. The eatable frog is common on the European continent. The bull-frog of North America is also well known. In farriery a kind of tender horny substance growing in the middle of a horse's foot, dividing into two branches which run like a fork toward the heel.

Frogfish, a species of fish having a horizontally flattened head, broader than the body, a deeply-cleft mouth, which is often furnished with filaments, the anterior dorsal fin short, and supported by three spinous rays. They keep themselves hidden in the sand, like the fishing frog, and surprising their prey, inflict dangerous wounds with their spinous rays.

Frog Hoppers, ranked under the homopterous sub-order of insects. The name of frog hopper refers partly to the form of their body, partly to their leaping powers, which are great; this power arises from the length of their hind legs. The larva of these insects, which resembles the parent in most respects except in the want of wings, envelops itself in a froth resembling human spittle. All must have often observed this on plants.



FROG HOPPERS.

Frohlich, Abraham Emanuel, a Swiss fabulist; born in 1796. He wrote three epics on the reformers Zwingli, Ulrich von Hutten, and Calvin; a volume of "Rhymed Proverbs," and "Selected Psalms and Spiritual Songs." He died in 1865.

Frohlich, Karl Hermann, a German poet and artist; born in Stralsund, April 8, 1821. His silhouettes and figures, accompanied by verse, have delighted childhood in two continents.

Frohschammer, Jakob, a German philosopher; born in Illkosen, Bavaria, Jan. 6, 1821; was a Catholic priest when he began the series of writings which called public attention to him and cost him his pastorate. These include "Christianity and Modern (Nature) Science," in which and other works, mysticism, "otherworldiness," and the phenomena of the imagination are incorporated among the more ordinary particles of the philosophic mosaic. He died in the Kreuth, June 14, 1893.

Froissart, Jean, a French chronicler; born in Valenciennes, in Hainault, in 1337. He began at 20 to write the history of the wars of the time, and made several journeys to examine the theater of the events he was about to relate. His chronicles form a work of permanent value, because of their accurate and impartial account of important events of the 14th century. They narrate events connected with France, England, Scotland, Spain, Brittany, etc. He is said to have died in poverty at Chimay in 1400 or 1410, but the year, the place, and the circumstances of his death are all alike uncertain.

Fromentin, Eugene, a French author; born in La Rochelle, Oct. 24, 1820. He died in St. Maurice near La Rochelle, Aug. 27, 1876.

Fronde, the name of a political faction which played a conspicuous part in French history during the minority of Louis XIV., and which gave rise to the celebrated insurrectionary movement known historically as the War of the Fronde. The members of this party obtained the derisive name of Frondeurs (slingers), from the pertinacious lampoon warfare which they waged against both the powerful minister of that day, Cardinal Mazarin, and the Queen Regent, Anne of Austria. Mazarin, as a foreigner and a parvenu, enjoyed the detestation of the French people — both patrician and proletarian — and especially had incurred the opposition of the Parliament of Paris to his measures. In 1648 Mazarin ventured on the bold step of arresting two of the most popular members of the latter body, and on the next day the Parisians rose in arms, dispersed some of the royal troops sent out against them, and barricaded the approaches to the Louvre, compelling the court party to retire to St. Germain, and thus leaving Paris in the hands of the insurgents. Upon the Prince de Conde advancing to besiege the capital, the parliament called the citizens to arms, when the Prince de Conti, the Duc de Beaufort ("Le Roi des Halles," and son of Henry IV.), and numerous others of the great nobles of the kingdom, came forward to head the insurrection. The famous Cardinal de Retz also joined the movement, nor was beauty wanting, in the persons of the Duchesses de Longueville and de Montbazon, to inspire the popular cause. The Prince de Conde, too, changed sides and went over to the malcontents, with whom the court party shortly afterward patched up a treaty of peace of but brief duration. Fresh contentions arose, and Mazarin caused the arrest of Conde and Conti, two of the princes of the blood. This step on the part of the hated Italian excited a revolt in the provinces, and Marshal Turenne hastened to the rescue of the Frondeur princes, but was routed in the battle of Rethel (1650). The cardinal, however, enjoyed but a mere temporary supremacy; the parliament again agitated against him, and procured his banishment from France, leaving the Prince de Conde master of the situation. Subsequently, the contest degenerated into a war of intrigue. Some of the Frondeur leaders were influenced by the queen to desert their party, and others were bought over by the cardinal's gold. Ultimately, all parties being weary with these dissensions, the court agreed to remove Mazarin, and a general amnesty was proclaimed. Conde, who refused to be a party to these terms, now finding his cause desperate, entered the Spanish service; while Mazarin, after a time, returned to Paris, and again obtained the reins of government.

Frontaura, Carlos, a Spanish author; born in Madrid, Spain, Sept. 4, 1834.

Frontenac, Louis de Buade, Comte de, a French colonial officer; born in France in 1620. He entered the army in 1635, and at an early age became brigadier. In 1672 he was appointed governor of the French possessions in North America, to be recalled 10 years later. In 1689 he was again sent out by the king, as the only man who could rouse the despairing colonists to hope and action. During the next nine years he loosed his savage allies on the defenseless villages of New England, repulsed a British attack on Quebec, and so broke the power of the Iroquois that they were never again a terror to the colony. He died in Quebec, Nov. 28, 1698.

Froschdorf, a village in Lower Austria, rather more than 30 miles from Vienna, and not far from the frontiers of Hungary, on the right bank of the Leitha river; called by the French Frohsdorf. It is celebrated for its splendid castle, which in recent times has acquired a kind of political importance, from having been, since 1844, the residence of the Duchess d'Angouleme and the rendezvous of the elder Bourbon party. After the death of the duchess it came into the possession of the Comte de Chambord, who greatly beautified the interior.

Frostbite, the freezing of any portion of the body by exposure to a high degree of cold. The parts of the body most exposed to the serious consequence of frostbite are those farthest from the seat of circulation, and the most exposed to a great degree of cold. These are, the toes and feet, fingers, ears, nose, and the cheeks below the eye. The effect of intense cold is, in the first place, to deaden the sensibility of the part most exposed, which it does by contracting the vessels and driving the blood from the surface; when the part, losing its healthy vitality, is unable to resist the specific influence of the surrounding cold, and quickly falls a prey to the potency of the frost, and, in a short time, a partial gives way to an absolute death, or mortification of the member or organ, which soon after separates or falls off. To guard against the danger of frostbite, the inhabitants of very cold countries, as the Russians and Esquimaux, cover both the cartilage of the ear and the nose. The treatment of frostbite consists in coaxing back by degrees the vitality of the part; this is most prudently effected by friction, at first with snow, then with water at ordinary temperature, no warmth being applied for some time. As the coldness subsides, the painful tingling returns, then redness and heat; in a short time the latter will be above the natural standard, and if not moderated, the part will inflame, and perhaps mortify.

Frothingham, Arthur Lincoln, an American archæologist; born in Boston, Mass., June 21, 1859; was educated in Rome, Italy, and at Leipsic; lectured on archæology at Johns Hopkins University in 1882–1886; and became Professor of Archæology and the History of Art at Princeton University in 1887. He was secretary of the Archæological Institute of America in 1884; founder of the "American Journal of Archæology" in 1885; associate director of the American School of Classical Studies, Rome, in 1895–1896; and director of the American Oriental Society.

Frothingham, Nathaniel Langdon, an American clergyman; born in Boston, Mass., July 23, 1793. His writings are marked by grace and refinement; died in Boston, April 3, 1870.

Frothingham, Octavius Brooks, an American clergyman; born in Boston, Mass., Nov. 26, 1822. His radical views led to the resignation of his pastorate in the Unitarian Church, Salem, Mass. He preached in Jersey City in 1855–1859; then organized the Third Unitarian Church in New York city, where he preached very radical and advanced views till the dissolution of the Church in 1879. The remainder of his life was devoted to travel and literary pursuits, his home being in Boston. He died in Boston, Nov. 27, 1895.

Froude, James Anthony, an English historian; born in Dartington, Devonshire, England, April 23, 1818. In the beginning of the Tractarian controversy he was a close friend of Newman, and was a contributor to the "Lives of the English Saints." He took orders in the Anglican Church (1844). He has written several standard historical works. He was the successor of Edward A. Freeman in the Professorship of Modern History at Oxford. He died in London, Oct. 20, 1894.

Fructidor, the name given in October, 1793, by the French Convention to the 12th month of the republican year. It commenced on Aug. 18, and ended on Sept. 16, and was the third summer month.

Fruit, in botany, a term applied to the ripened ovary and its contents, quite regardless of their being eatable or otherwise. The most common forms of fruit are, the pomum or apple, the drupe or peach, and plum; the glans, as the acorn; the pineapple, the fruit of which is a scaly berry, surmounted by a crown of spinous leaves. This fruit may be considered one of the finest in the world. The legume, or pea; the siliqua, or pod, as in the mustard, and which differs from the legume chiefly in this, that the chamber containing the seeds is divided; the capsule, as in the poppy, larkspur, etc.; and the bacca, or common currant, gooseberry, etc. Besides these leading and distinctive forms of fruit, there are numerous minor variations in their external forms and internal structures.

Fruitarian, literally, one whose food consists exclusively of fruits and nuts, those products of the vegetable kingdom which require neither cooking nor seasoning to become edible and palatable.

Fruit Pigeon, in ornithology, a genus of pigeons which feed solely on fruit. The species inhabit the forests of India, the Moluccas, the Celebes, Australia, and the Pacific Islands. Their plumage is very brilliant; green, yellow, and purple are the prevailing colors.

Frustum, or **Frust,** in geometry, a portion cut off from any solid figure; used specially in the expression, frustum of a cone, which means any part cut off from a cone, excepting only the vertex.

Fry, Elizabeth (Gurney), an English philanthropist and prison reformer; born in Earlham, Norfolk, England, May 21, 1780. In 1810 Mrs. Fry joined the ministry, and thenceforward devoted herself to offices of the purest benevolence and piety. Owing to her unwearied exertions, important reforms were effected in the prison systems, not only of Great Britain, but also in those of France and Germany. After years of indefatigable labor among the poor and the criminal, this estimable lady died in Ramsgate, Oct. 12, 1845.

Fry, James Barnet, an American military officer; born in Carrollton, Green co., Ill., Feb. 22, 1827; was graduated at the United States Military Academy in 1847. After serving as assistant instructor at West Point, he was assigned to the 3d Artillery, then in Mexico, where he remained till the close of the war. At the outbreak of the Civil War he was appointed to the staff of General McDowell. In 1863 he was appointed provost marshal-general of the United States, with headquarters at Washington, D. C.; and in 1864 was promoted Brigadier-General. He was brevetted Major-General in the regular army, March 13, 1865, for "faithful, meritorius, and distinguished services," and after the war served in the divisions of the Pacific, the South, the Missouri, and the Atlantic, till 1881, when he was retired. He died in Newport, R. I., July 11, 1894.

Fry, William Henry, an American composer and journalist; born in Philadelphia, Pa., in August, 1815. In 1844 he became a contributor to the "Ledger" in his native city, and in the course of the year following he brought out his opera of "Leonora." In 1846, Fry visited Europe, remaining there six years, as the correspondent of several American newspapers, and after his return in 1852 again gave his attention to music, producing several symphonies of great merit, besides composing the music to the inaugural ode for the Industrial Exhibition at New York in 1853. He subsequently became attached to the editorial staff of the New York "Tribune," and attained much popularity as a public lecturer. He died in Santa Cruz, W. I., Dec. 21, 1864.

Frye, William Pierce, an Amercan diplomatist; born in Lewiston, Me., Sept. 2, 1831; was graduated at Bowdoin College in 1850; and was later admitted to the bar; was a Representative in Congress in 1871–1881. In the latter year he was elected to the United States Senate; and was reëlected in 1887, 1893, and 1900. He was president pro tem. of the Senate in 1896–1901; was a member of the American-Spanish Peace Commission in 1898, and after the death of Vice-President Hobart was again elected president pro tem. of the Senate. Senator Frye was for many years a member of the Senate Committee on Foreign Relations.

Fuchsia, so named from the discoverer, Leonard Fuchs, a German botanist. More than 50 species are known; most from the warmer parts of America, Mexico, Peru, Chile, etc., except two from New Zealand. These beautiful plants are common in gardens, conservatories, and flower pots in windows. The hybrids generated by intercrossing them now amount to some hundreds.

Fuel, any combustible substance which is used for the production of heat. In this extended sense of the term, alcohol, wax, tallow, coal-gas, oil, and other inflammable bodies which are occasionally used, especially in the chemical laboratory, as sources of heat as well as light, might be included under it. But the term fuel is more properly limited to coal, coke, charcoal, wood, and a few other substances, which are our common sources of heat, and as such are burnt in grates, stoves, fireplaces, and furnaces. In this country, as in England, coal, from its abundance and cheapness, is the fuel commonly employed; but in other countries, as France, Germany, etc., wood is chiefly used, either in its original state or in the form of charcoal. Peat is used in Ireland.

Fuenterrabia, or **Fontarabia,** a fortified frontier and seaport town of Spain, in Biscay, province of Guipuzcoa, on a small neck of land, on the left bank of the Bidassoa, at its mouth, 20 miles W. by S. of Bayonne. The town used to be reckoned one of the keys of the kingdom, but its walls were levelled by the British troops in 1813. Fuenterrabia was taken, in 1521, by Francis I. of France, in 1719, by the Duke of Berwick.

Fuero, a Spanish term, derived from the Latin forum, which signifies a place where justice is administered; and hence, jurisdiction. From this latter sense it came, in Spain, to be transferred to collections of laws, as embraced in special charters and privileges extended to certain provinces, and forming what Americans would call a "constitution."

Fugger, the name of a rich and illustrious family of Suabia, descended from a weaver, who originally lived in the environs of Augsburg, about 1300. They were at first successful in selling clothes, but afterward extended their dealings, and became merchants, accumulating an immense fortune. Reaching the height of their affluence at the commencement of the 16th century, they rendered considerable services to the Emperors Charles V. and Maximilian, by making them large advances. These princes bestowed titles of nobility on the Fugger family, and they soon became connected with the best blood of Germany. The best known of them are the three brothers, Ulric, James, and George; and afterward Raymond and Antony, both sons of George. Ulric received for his loans to Maximilian the countship of Kirchberg, and the seigniory of Weissenhorn, which afterward remained in the possession of his family. He was a great encourager of learning. Antony and Raymond bore, to a great extent, the expenses of the expedition of Charles V. against Algeria, obtaining from him the permission to coin money. One day, at an interview with the emperor, Antony, as a mark of his regard and esteem, threw into the fire all the title-deeds and securities which Charles had deposited with him. Several of this family still exist, and Augsburg owes its position on the Continent, as a financial center, to the energy and talent of the Fuggers.

Fugger, Otto Heinrich, Count of, a Bavarian-Spanish general; born in 1592. He led troops at his own cost against the Bohemian rebels; in 1624 fought at Breda; in 1632 was with Tilly in Franconia; then commanded in Suabia; in 1634 assisted at the conquest of Regensburg and the victory at Nordlingen; in 1635 took Augsburg, removing the Lutheran senate and installing a Catholic one; while serving under Montecuculi as imperial general-master of ordnance against the Turks, he fell at St. Gotthardt, Aug. 1, 1664.

Fugitive, in law. As one State cannot pursue those who violate its laws into the territories of another, the practice prevails among the more enlightened nations of mutually surrendering such fugitives to the justice of the injured State. This practice is founded on national comity and convenience, or on express compact. The United States recognize the obligation only when it is created by express agreement. As between the States of the American Union, extradition is made compulsory by the Federal Constitution. In the several States there are statutory provisions or established usages regulating the procedure in such cases.

Fugitive Slave Law, a law which was enacted by the Congress of the United States in 1850. By its provisions a slave escaping from his master into another State was to be seized and restored to his owner, and any person aiding in his flight was to be deemed guilty of having committed a penal offense. The most noted case arising during this exciting period of national history was that of Dred Scott.

Fulda, Ludwig, a German dramatist; born in Frankfort-on-the-Main, July 15, 1862. His special gifts are an easy mastery of the resources of language and of poetical technique, and a lively wit ever conscious of a serious purpose.

Fulgora, in entomology, lantern fly, has a large head, much prolonged in front, and was said by Madame Merian to shine with a phosphorescent light. The fact has since been disputed. It is a native of Surinam. Another species is from China.

Fuller, Anna, an American novelist; born in Cambridge, Mass., Nov. 9, 1853.

Fuller, Henry Blake, an American author; born, of New England blood, in Chicago, Jan. 9, 1857. He has written stories of Chicago life.

Fuller, Hiram, an American journalist; born in Plymouth co., Mass., about 1815. Together with N. P. Willis and George P. Morris he published the "New Mirror." The three subsequently established the "Daily Mirror," which Mr. Fuller edited for 14 years. He resided for a number of years in London and Paris. He died in 1880.

Fuller, Melville Weston, an American jurist; born in Augusta, Me., Feb. 11, 1833; was graduated at Bowdoin College in 1853; admitted to the bar in 1855; settled in Chicago, Ill., in 1856, and practised there till 1888. He was a delegate to the National Democratic Conventions of 1864, 1872, 1876, and 1880; and was appointed chief-justice of the United States Supreme Court, April 30, 1888.

Fuller, Thomas, an English historian; born in June, 1608. He was a presbyter of the Established Church and a prebendary of Salisbury Cathedral. He was a voluminous writer. The one work for which he is now esteemed is "The Worthies of England" (folio, 1662), which is full of biographical anecdote and acute observations on men and manners. He died in London, England, Aug. 16, 1661.

Fullerton, Lady Georgiana, an English novelist, daughter of the 1st Earl Granville and wife of Alexander Fullerton; born in Tixall Hall, Staffordshire, England, Sept. 23, 1812. She died in Bournemouth, Jan. 19, 1885.

Fulling, a process by which cloth made of a felting fiber is condensed, strengthened, and thickened, with a loss of width and length.

Fulling Mill, a mill for fulling cloth.

Fulmar Petrel, a bird which inhabits the Northern seas, where it is found almost everywhere in incalculable numbers. It breeds in the Faroe Islands, Iceland, Greenland, Spitzbergen, and in Scotland in the Southern Isles of Barra and the Outer Hebrides, and particularly in the islands of St. Kilda, Borrera, and Soa. The fulmar is about the size of a large duck. The head and neck are pure white; the back and wings of a pearly gray; breast, belly, and under surface white; bill yellow; legs and toes a brownish yellow. The color of the young is a brownish gray. In St. Kilda, where they breed in incredible numbers, these birds are of the greatest value to the inhabitants. Its eggs are held in high estimation, and sought at great risk. It breeds on the faces of the highest precipices, on which every grassy shelf over a few inches in extent is covered with their nests. These are slightly excavated in the turf and lined with dry grass and withered tufts of sea-pink. One egg is deposited at a time, which the natives rob the nest of by descending with ropes from the summit of the cliffs. The birds, both old and young, when seized vomit a quantity of clear amber-colored oil of a disagreeable odor. This oil is one of the most valuable products of St. Kilda. The old birds have been seen to feed the young with it. The best quality is obtained from the old birds. The fulmar feeds on animal substances, chiefly fat. It flies buoyantly and rapidly, and accompanies the ships to the highest accessible latitudes, keeping an eager watch for any fatty substance thrown overboard.

Fulminate, in chemistry, a salt of fulminic acid.

Fulton, Robert, an American inventor, celebrated as being the introducer of steam navigation; born of Irish descent, in Little Britain, Lancaster co., Pa., in 1765. Early in life he manifested a taste for painting, and purposing to adopt it as a profession, he repaired to England to study under

Benjamin West. In that country, however, he became acquainted with the Duke of Bridgewater, the founder of the canal system of Great Britain, who induced Fulton to abandon art, and take to the study of mechanical science. This nobleman was at the time engaged in a scheme of steam navigation, which he imparted to Fulton. The latter visiting Birmingham was brought into communication with the celebrated James Watt, who had just succeeded in his great improvement of the steam engine, with the construction of which Fulton made himself thoroughly familiar during his stay. About this time he invented a machine for spinning flax, and another for making ropes, for which he obtained patents in England. In 1796 he published a treatise on the improvement of canal navigation. From 1797 to 1804 he resided in Paris with Mr. Joel Barlow, the American representative at the French court. During this period he invented a submarine or plunging boat, called a "Torpedo," designed to be used in naval warfare. He invited the attention of the French government to his invention, and Bonaparte, then First Consul, appointed Volney, La Place, and Monge as a commission to examine it. Several experiments were made in 1801 in the harbor of Brest. He could easily descend to any depth, or rise to the surface; and where there was no strong current, the boat was quite obedient to her helm while under water. On one occasion, he remained in the torpedo several feet below the surface for more than four hours; but the motion of the boat while submerged was very slow, and it was clearly unequal to the stemming of a strong current. The French government declined to patronize the project, and Fulton accepted an invitation from the English ministry, who also appointed a commission to test the merits of his torpedo. He appears, however, to have received but little encouragement, and in 1806 he returned to the United States. Having been supplied with the necessary funds by Robert Livingston, who had been American ambassador at Paris, Fulton had the satisfaction of proving, in 1807 that steam could be applied to the propulsion of vessels with entire success. His achievement excited universal admiration, and from that time steamboats were rapidly multiplied on the waters of the United States. His first steamboat, called "The Clermont" (of 140 feet keel and 16½ feet beam), made a progress on the Hudson of 5 miles an hour. His second large boat on the Hudson was the "Car of Neptune," and was built in 1807. He afterward built other steam vessels, one of them a frigate which bore his name. His reputation became established, and his fortune was rapidly increasing, when his patent for steam vessels was disputed, and his opponents were in a considerable degree successful. Though an amiable, social, and liberal man, the anxiety and fretfulness occasioned by the lawsuits about his patent rights, together with his enthusiasm, which led him to expose himself too much while directing his workmen, impaired his constitution, and he died at the early age of 49, at New York city, Feb. 24, 1815.

Fulton, Justin Dewey, an American clergyman; born in Earlville, N. Y., March 1, 1828; was graduated at the University of Rochester in 1851; held pastorates at Tremont Temple, Boston, in 1863–1873, and at the Hanson Place Baptist Church, Brooklyn, in 1873–1875; and founded and was for several years pastor of the Centennial Baptist Church in Brooklyn. He resigned, however, to devote himself to writing and speaking against the Roman Catholic Church. He died in Somerville, Mass., April 16, 1901.

Fulvius, a name common to some eminent Romans, the most remarkable of whom was a senator, intimate with Augustus. He disclosed the emperor's secrets to his wife, who made them public to all the Roman matrons; and for this he received so severe a reprimand from Augustus that he and his wife hanged themselves in despair.

Funchal, the capital and seaport to the island of Madeira, in the center of a large bay on the S. coast. It is irregularly built; the streets are narrow, winding, ill-paved, and dirty. An old castle, which commands the roads, stands on the top of a steep, black rock, called Loo Rock, surrounded by the sea at high water. The entire produce of the island, consisting mostly of wine and sweetmeats, is exported from Funchal. Population 18,778, among whom are many English, French, Portuguese, and mulatto and negro freedmen.

Funck - Brentano, Theophile, a French philosophical and critical writer; born in Luxembourg, Aug. 20, 1830. His thorough studies in law and medicine imparted to his philosophical writings an exactitude of thought and inspired a special stress on method. As a critic he was esteemed for the happy presentation and careful elaboration of his thought.

Function, in physiology, the proper office of any organ in the animal or vegetable economy.

Fundy, Bay of, a large inlet of the Atlantic, on the E. coast of Canada, separating the S. part of the peninsula of Nova Scotia from New Brunswick, extending 100 miles S. W. to N. E., and about 30 miles average breadth. The bay receives the waters of the St. John, the St. Croix, and numerous other rivers. The bay is deep, but its navigation is dangerous. At its entrance are Grand Manan and other islands. The tides sometimes rise to the height of 70 feet. A ship railway has been constructed across the narrow Chignecto isthmus to connect this bay with Northumberland strait and the Gulf of St. Lawrence.

Funen, an island of the Danish archipelago, separated from Jutland by the strait called Little Belt; area, 1,123 square miles; pop. 200,000.

Funeral Rites. Religious dogmas combine with physical circumstances to decide the character of the last tribute of friendship and love paid to the remains of the dead.

Among the Hindus the corpse is perfumed and adorned with flowers; it is then burned; after many ceremonies the bones are deposited in a casket and buried, but afterward disinterred and thrown into the Ganges. The Mohammedans bury their dead. The interment takes place as soon as possible, in obedience to the command of the prophet. No signs of excessive grief, no tears nor lamentations are allowed. The Egyptians, it is well known, embalmed their dead. Among the Jews the next of kin closed the eyes of the deceased; the corpse was then washed, and laid for a time in spices or anointed with spices, swathed in linen bandages, and deposited in the tomb. In the religious creed of the Greeks and Romans sepulture was an act of piety to the dead; without it the spirit had to wander 100 years on the banks of the gloomy Styx. The last breath was generally caught by a near relative, who opened his mouth to receive it; the body was washed and crowned with flowers, a cake of flour and honey placed in the hand, as a bribe for Cerberus, and an obolus in the mouth, as a fee for Charon. Interment and burning were practised indifferently.

In the Roman Catholic Church the body is washed immediately after death, a crucifix is placed in the hands, and a vessel of holy water at the feet, with which the visitants sprinkle it. The ecclesiastics remain with it till the interment, offering up prayers. When the time of burial arrives the priest bearing the crucifix stands at the head, and the officiating priest at the foot of the coffin. The coffin is sprinkled thrice with holy water, and the "De profundis" and "Miserere" are chanted. The body is carried to the church, during which time psalms are chanted, especially the "Miserere," and, at the close of each, a requiem. In the church the office of the dead is performed and the mass is celebrated. In conclusion the body is thrice censed and sprinkled with holy water. At the grave a prayer and benediction are pronounced and the body and grave are thrice censed and sprinkled with holy water. The anthem "Ego sum Resurrectio" then commences, during which the body is again thrice sprinkled. A prayer, followed by an anthem, "Si iniquitates" and "De profundis," succeeds; and the body with the feet toward the E., is lowered into the grave, each of the mourners, before it is covered, sprinkling it in turn. The dead are commemorated on the third, seventh, and twentieth day after interment, and on their anniversaries. Among Protestant bodies there is usually no formal service, but prayer is offered up or an ordinary religious service held before the interment in the house of the deceased or his relative, or, in the case of a public funeral, in some public place. The wake, or watching, is celebrated in some parts of Great Britain, particularly in the remoter districts. In North Wales the "myl nos" is kept with solemnity. The friends bring a picnic supper and pass the night before the funeral in singing psalms and reading the Scriptures. In Ireland the wake of the lower classes is usually a scene of tumult and drunkenness.

Funeral Sacrifice, the slaying of men or animals to accompany the soul of an eminent person to the world of spirits — the former to give him what assistance he needs, the latter to supply him with food. It was an early and a widespread custom.

Fungi, an extensive group of cryptogamic plants, including mushrooms, toadstools, rusts, smuts, and mildews.

Funston, Frederick, an American military officer whose capture of Aguinaldo, carefully thought out, well-planned with an admirable judgment of men, successfully executed without loss, requiring deliberation, coolness, endurance, and daring, was characteristic of the resourcefulness and energy of the man. He is the most picturesque soldier, and along with General Bell, the most dashing the Spanish-American war has developed. The many kinds of danger that this expedition involved, especially the danger of treachery, make it stand out as a most extraordinary exploit; and it is no doubt the last brilliant military achievement of the war in the Philippines, for it has the great and welcome merit of ending hostilities. The story of the capture is worth telling.

Aguinaldo had long been in hiding in the province of Isabella, in the N. E. part of the Island of Luzon. In January he sent a messenger with letters to Baldemero Aguinaldo in Central Luzon, ordering men to be dispatched to him as soon as possible. General Funston secured these letters which, of course, conveyed the information where the leader was. He had already secured the seal of Lacuna, one of Aguinaldo's generals.

Funston then went to Manila and secretly organized his expedition, consisting of 78 Macabebes who spoke the Tagalog language, and 4 American officers — Capt. Russell T. Hazzard and Lieut. Oliver P. M. Hazzard, Capt Harry W. Newton and Lieut B. J. Mitchell and 4 former insurgent officers — one Spaniard and 3 Tagalogs.

They sailed from Manila on March 8 on the gunboat "Vicksburg"; and after 6 days the "Vicksburg" put out her lights and ran inshore on the N. of Luzon. The party landed and marched 25 miles to Casiguran, where the former insurgent leaders exhibited the American officers as prisoners, and said that they had captured them and were carrying them to Aguinaldo. General Funston and the other American officers were kept in prison for three days to deceive the people of the settlement, who were strongly loyal to Aguinaldo, and letters were sent forward to Aguinaldo, bearing the forged signature and the seal of Lacuna. One of these letters gave news of the progress of the war, and the other said the writer was sending him reënforcements. The forged letters completely deceived Aguinaldo.

On March 17 the party started on a 90-mile march to Palanan, where Aguinaldo's headquarters were, through a rough, uninhabited country, eating only shell-fish and suffering many hardships. After a march of 7 days and nights they halted 8 miles from Palanan, and sent to Aguinaldo's camp for food. The Filipino chief sent supplies and directed that the Americans be kindly treated, but be forbidden to enter the town.

By a skillful maneuver to avoid attracting attention, the American officers accompanied the Macabebes and the Tagalog officers into the town. The Spaniard of the party, when he thought that Aguinaldo's body-guard had had their suspicions aroused, ordered an attack. Three insurgents were killed, and in the confusion that followed one of the former insurgent officers arrested Aguinaldo, saying, "You are a prisoner of the Americans." General Funston had already openly taken command of the party. Some of Aguinaldo's officers fled and others were captured. The party returned to the "Vicksburg" with Aguinaldo, and arrived at Manila on March 27. Aguinaldo, who had on January 28 proclaimed himself dictator, and had been living at Palanan, was imprisoned in the palace, where his former generals and his mother and his wife were permitted to visit him.

General Funston, who had held the rank of Brigadier-General of volunteers, was on March 30, 1901, promoted by the President to the same rank in the regular army.

Within a half a decade General Funston has risen from obscurity to his high rank by his restless and energetic courage. His early life was dull and unexciting. He was born in 1865; and when he was two years old his father moved to Kansas. He attended the public schools, and finally the University of Kansas at Lawrence, where he was considered a rather poor student.

Funston left the university without graduating, and became a newspaper reporter, giving up his desk before long to collect botanical specimens for the government in the Bad Lands of Dakota. He took part in the expedition to the Death Valley in California in 1891. His party spent a considerable time in that fiery sink, suffering terribly. Of all the members of the expedition Funston is the only one now living who is still sane. In 1893–1894, he went N. to botanize for the government in Alaska. He had some scruples about undertaking this trip, because as he said his botanical knowledge did not "extend much further than knowing a violet from a sunflower." He bought a few textbooks, however, and got to know a little about Arctic flora before he started, so that his trip turned out to be valuable after all.

His winter was full of adventure. Once, in his canoe, he came across a fleet of English whalers, and he and one of the captains got up a yarn about England and America being at war. The other captains and all the crews were much alarmed and were preparing to hide in the ice for a year or more, when the two jokers told them so far as they knew Uncle Sam and John Bull were still patting each other on the back.

Funston went to Cuba in August, 1896, on a filibustering expedition. This was the first step in his military career. About two weeks after his arrival he was made a captain and placed in command of two guns. He commanded these guns in the 12 days' siege of Cascorra, and in the engagement at La Machucha. He took part in the battle of Desmayo, the Cuban Balaklava, on October 8, 1896. "At Desmayo," he wrote, "that little force of 479 Cubans rode against magazine rifles firing 70 shots a minute, and breech-loading artillery, and held their position in the face of that pitiless fire until 52 per cent. had tumbled from their horses killed or wounded."

After Desmayo, Gomez, under whom Funston was serving, marched to meet Calixto Garcia near Guimaro. Guimaro, although defended by 11 small forts, was attacked. On the second day, Major Osgood, of Garcia's force, who had charge of the artillery, was killed, and Captain Funston took his place with the rank of major. He was created chief of artillery the day Guimaro surrendered. Subsequently he took part in numerous engagements east of the Cauto river. He fought at Banes, and on May 11, 1897, bombarded the Sama forts for General Torres. He commanded the five guns used in the attack on Las Tunas on August 28, and at the end of the operation was promoted to lieutenant-colonel. On Dec. 12, 1897, while crawling along the ground, suffering cruel pain from bullet wounds in both lungs and other injuries, he was captured by the Spanish. His old habits of mind promptly came to his assistance, and giving the Spanish certain facts about the Cuban army, in which much poetry was mixed, he managed to get permission to leave Cuba, He went to New York, where it was at first thought he would never recover from his wounds; but very soon he was lecturing in Kansas about his exploits.

When our war with Spain began he offered his services to his country. Governor Leedy of Kansas appointed him colonel of the 20th Kansas Regiment. While the regiment was being drilled, Colonel Funston was called to Tampa to consult with General Miles about the situation in Cuba. In Tampa he went about in civilian clothes, saying that when there was plenty of sure-enough fighters around he would not pose as a warrior — not without stimulants at least. He returned to Kansas and took his regiment to San Francisco. Between drills, Colonel Funston used to run over from San Francisco to Oakland, where he fell in love with Miss Eda Blankart, whom he married. Then he sailed for Manila at the head of his 1,300 men.

It was not long before the cable began to bring news of the 20th Kansas. Toward the spring of 1899, the country was thrown into amazement by two startling feats of its colonel, and several of its members. Funston's own words give a sufficient description of these exploits. He wrote:

"I swam the Bagbag river with the other officers and 4 men of the 20th Kansas under a hot fire, April 20. The Rio Grande river I crossed two days later on a raft with 45 men and after a desperate fight drove 2,500 of the enemy from an intrenched position."

In recognition of his gallantry and skill, he was appointed Brigadier-General of volunteers on May 3, 1899. Shortly after this he sailed for the United States with his regiment, arriving in San Francisco on Oct. 11, 1899. The men, then only 708 in number, were met by the governor of Kansas and a large delegation of happy friends for whom they paraded before proceeding to their homes. The people of Kansas presented General Funston with a handsome sword. But on the 23d of November, he sailed again for Manila to complete his work, and to round out his fame.

The distance between this country and the Philippines makes the soldiers seem vague and uncertain figures. Only occasionally when they perform some extraordinary deed do they stand out clear and firm in the sight of the public. General Funston stands so now and gives promise of keeping the position.

Fur, the coated skins of wild animals, especially of those of high N. latitudes; such as the wolf, bear, beaver, etc. For wearing, the hair or fur is cleansed, and the skin is generally slightly tanned. The most valuable furs, such as ermine and sable, come chiefly from Russia. When unprepared, or merely dried, the furskins go under the name of peltry.

Furies, in classical mythology, the three daughters of Nox and Achero, or of Pluto and Prosperine, also called the Eumenides. Sometimes they were represented young and beautiful, with or without serpents twining about their heads. These avenging deities of the ancients were called Alecto, Megara, and Tisiphone, to which some add Nemesis. They were supposed to be the ministers of the gods, to execute their irrevocable decrees; hence their stern aspect and inexorable will. Their sphere of action was consequently both in the infernal regions to punish condemned souls, and on the earth, to rack the guilty conscience and chastise by mental torments. The most usual mode of typifying the Furies was by giving them a grim and frightful aspect, black and bloody garments, serpents, instead of hair, twining round their heads, with a burning torch in one hand and a whip of scorpions in the other, and always attended by Terror, Paleness, Rage, and Death.

Furman University, a coeducational institution in Greenville, S. C.; founded in 1854 under the auspices of the Baptist Church.

Furman, Richard, an American Revolutionary patriot; born in New York in 1755; preached in Baptist churches in South Carolina; was pastor at Statesburg, S. C., and president of the first Baptist convention of the United States in 1814. He died in 1825.

Furnace, a place where a vehement fire and heat may be made and maintained, as for melting ores or metals, heating the boiler of a steam engine, warming a house, baking pottery or bread, and other purposes.

Furness, Horace Howard, an American Shakespearean scholar and editor; son of William H.; born in Philadelphia, Pa., Nov. 2, 1833; was graduated at Harvard in 1854; studied law, and was admitted to the bar in 1859. The honorary degree of Ph. D. was conferred on him by the University of Gottingen in recognition of his services to Shakespearean literature. He was the editor of the exhaustive "New Variorum Edition" of Shakespeare, the volumes of which have been appearing since 1871.

Furness, William Henry, an American clergyman and author; born in Boston, Mass., April 20, 1802. He was educated at Harvard; studied theology at Cambridge, Mass., and was pastor of the First Unitarian Church in Philadelphia in 1825–1875. He died there Jan. 30, 1896.

Furniture. The various movable appliances or articles in the interior of a house.

Among the European States from A. D. 500 to 1500, the ecclesiastical style prevailed in furniture as in every other species of art, attaining its greatest eminence in the decorated Gothic of the 14th century. Articles of furniture previous to 1500 are very rare. The illuminations of MSS. supply more abundant details. For three centuries after the Conquest domestic furniture was very scanty. The hall was furnished with tables and benches, the furniture of a bedroom consisted of little more than a bed and a chest. The floors were usually of wood, strewed with rushes or something similar. Chairs were large and cumbrous, and were usually fixtures; wooden forms, sometimes with back rails, being placed against the walls. Carpets were first introduced in England by Eleanor of Castile, wife of Edward I., but were not generally used till the the 15th century. The furniture of the dining room was very limited. Boards on trestles were in general use as tables; the huge salt cellar was the chief ornament of the board. At royal and noble tables silver goblets, plates, and dishes were seen, but in ordinary houses wooden bowls and trenchers only were used. Earthenware, though made in the form of pitchers and jugs, does not seem to have been applied to the fabrication of plates and dishes. In the 14th and 15th centuries remarkable progress was made and a considerable degree of splendor in furniture was attained. Defense began to be not the only object studied in the construction of buildings. The apartments expanded in height and were hung with the newly invented tapestry of the Netherlands (the workshop and exchange of mediæval Europe), called "Arras" from the place of its origin. The Gothic paneling of the carved bedsteads, chairs, screens, etc., was dazzling with scarlet, blue, and gold, and costly embroidered hangings and curtains heavy with heraldic symbolism, cabinets, reading-desks, prie-dieus, ivory and enameled coffers, fire dogs or andirons elaborately chased and gilded, began to appear, all harmonized to a rich glow of color by the gemmed and jeweled light that stole through the mullions of the storied windows of "bower and hall."

The progress of this decorative style was suddenly arrested by the "Renaissance," or revival of ancient classical art and literature, of which Italy was the earliest seat, and from whence the impulse was given that communicated itself speedily to the rest of Europe. A genuine and self-evolved style instantly went out of fashion, and was discarded for an imitation and counterfeit one based on the copying of understood classic models which were applied without consideration to the most incongruous objects. The classical temple was the dominant idea in the manufacture of furniture as well as in the construction of a palace or a cathedral, and columns were considered as necessary in one species of art as in the other. All the architectural details of Roman buildings were then applied to furniture; the lions, griffins, chimeras, etc., of the temple frieze encumbered the stately pillars of the Italian palaces, and caryatides and Roman trophies replaced the patron saint and the crucifix. With all its absurdities, it must be noted that this style was in the hands of great men, and their productions display a boldness and vigor of line, and a mastery over human and animal forms that give dignity to a licentious freedom of design in which all appropriateness is forgotten. Specimens of the Renaissance are still met with, though daily increasing in value. Gothic art never recovered its lost ground.

Various articles now of daily use were introduced about this time. Chamber clocks began to be part of the usual furniture of a room. The famous one of silver gilt designed by Holbein and presented by Henry VIII. to Anne Boleyn, was purchased by the queen for £110, at the sale of Horace Walpole's effects at Strawberry Hill in 1842, and is now at Windsor. The oldest clock that is supposed to go tolerably now in England is at Hampton Court, of the date of 1540. Looking glasses or mirrors were now made in Italy, to be suspended on the walls of rooms, and were among the most costly articles of furniture. A little later musical instruments, both a species of hand organ and the virginals, the earliest form of the modern harpsichord, appear. With various modifications the Renaissance style continued dominant for nearly two centuries. In England it degenerated into positive ugliness, the furniture of the time of Elizabeth and James I. having very little to recommend it in tasteful design. It is distinguished by a mixture of overwrought heavy moulding, combined with thin spindly columns, twisted legs, and other inelegant characteristics. The United States have long taken the lead in the manufacture of fine furniture of all kinds and every European style is successfully imitated here.

Furnivall, Frederick James, an English historian of literature; born in Egham, Surrey, England, Feb. 4, 1825. A lawyer by profession, he became a socialist and reformer, and a student of debatable literary problems.

Furs. Under the name of furs may be included the skins of almost all those animals which, for the sake of protection against cold, have for a covering an under layer of soft woolly, or downy texture, through which grows in most instances an upper one of a more bristly or hairy nature; some by nature possess more of the under coat, and others more of the upper, the proportion varying considerably in different animals and countries. In winter the fur becomes thicker in its growth, thereby improving the quality and value for commercial purposes; young animals too possess thicker coats than full-grown ones. In some instances the under-fur alone is used in manufacturing, while the upper hairs are removed as in the fur-seal.

The more general use of furs in all civilized countries has made the fur trade of the present day of even greater importance than in those flourishing days when the fur traders were the chief pioneers of the North American continent; the quantities of many fur-bearing animals have vastly increased, especially of those rather small mammals which seem to thrive and breed quickly in the proximity of settlements; the larger ones, on the other hand, such as bears, beavers, etc. will in course of time, if not protected, become generally reduced in numbers, a fate which has overtaken the buffalo or North American bison.

The chief supply of furs is obtained from Siberia and the N. parts of North America, and, as these tracts are for the greater part of the year frostbound, the fur-bearing animals enjoy a comparatively unmolested life; the fur, therefore grows thickly during the winter season, and is in its best condition when the animal is trapped in the spring; large quantities also of the smaller sorts are found in the United States; Europe produces immense numbers of common furs, such as rabbits, hares, foxes, etc., besides the more valuable stone and baum (tree) martens, though the larger animals have almost disappeared as the countries have become more and more cleared and inhabited; South America yields nutrias and chinchillas; while Australia exports rabbits, opossums, and kangaroos, and Africa monkey and leopard skins. Nearly all fur-skins are brought to the market in the raw or undressed state.

The two leading companies are the Hudson Bay Company, established in 1670, and the Alaska Commercial Company in 1870; the American Fur Company of New York, the Northwest Company, and the Russo-American Company of Moscow once held important positions, but they have long since been broken up or amalgamated. The furs of the two first-named companies, together with large quantities consigned from numerous private traders, are annually offered in London for public auction in January and March, with a smaller sale in June; periodical sales during the year are held besides of Australian, African, and other fur skins. Many important fairs take place in Europe and Asia, of which the chief are at Leipsic in Germany (at Easter and Michaelmas), Nijni Novgorod and Irbit in Russia, and smaller ones at Frankfort (Germany), Ishim and Kiakhta (both in Siberia).

The usual mode of dressing furs is by steeping them in liquor for a short time, after which the pelts are "fleshed" over a sharp knife (to get rid of the excess of fat, etc.), and subsequently dried off; they are next trodden by the feet in tubs of warm sawdust and common butter, by which means the pelt or leather is rendered supple; the skin is finished in dry sawdust, and beaten out. Certain furs, such as beaver (now to a limited extent), nutria, hare, and rabbit, are used in the manufacture of hats and other felted fabrics, for which purposes the under-fur alone is retained; it is cut off from the pelt, separated from the upper hair, and felted together by means of various machinery.

Furst, Julius, a Polish Orientalist; born in Zerkovo, Posen, May 12, 1805. His origin was Jewish. He obtained a marvelous mastery of the rabbinical literature, utilized in his great "History of Jewish General and Literary Culture in Asia," and "History of Biblical Literature and of Hellenico-Judaic Letters" (1867–1870), etc. He suffered many attacks from critics. Died in Leipsic, Feb. 9, 1873.

Furst, Walter, one of the founders of Swiss freedom and independence. Heading some brave men, he took and destroyed some forts belonging to the Austrians; which was the first step, in 1307, to the restoration of Switzerland as an independent nation. He was a fellow patriot of William Tell.

Fuse (a shortened form of fusee), a tube or casing filled with combustible material, and used for igniting a charge in a mine or a hollow projectile. The invention was undoubtedly contemporaneous with that of hollow projectiles.

Fusel Oil, an oily product formed during the fermentation of potatoes, corn, and the juice of grapes. This is separated in the rectification of the spirit, occurring in the last part of the distillate as an acrid, oily liquid, having a peculiar odor and burning taste; it is poisonous, producing headache and nervous depression.

Fusion, in ordinary language, the act of fusing, melting, or rendering liquid by means of heat; or the state of being melted or liquefied by means of heat. In politics, the term is used of the union of opposing parties for a common end. If a ticket should contain the names of members of two political parties with a view of securing for that ticket enough votes to defeat a nominee of a third party at an election, that would be called a "fusion ticket."

Fustel de Coulanges, Numa, Denis, a French historian; born in Paris, March 18, 1830; died in Paris, Sept. 12, 1889.

Fustian, a species of cotton cloth somewhat similar in manufacture to velvet, having, in addition to the warp and weft, a species of pile, consisting of other threads doubled together, which are thrown up in ridges and conceal the original warp and weft, which are the groundwork of the fabric.

Fustic, a name given to certain yellow woods employed in dyeing.

Future Life, a life to succeed this one; a life beyond the tomb.

Ethnic Faiths.—The belief in a future life is very widely spread, many observers who have denied that it is entertained among certain tribes indirectly confuting themselves by the facts which they put on record. In its early form no distinction is drawn between the souls of men and brutes; for both another state of existence is reserved. In the lowest form of Animism, a figure of a deceased friend appearing to a survivor in a dream is supposed to be the actual soul of the person dead, whence faith in another state of existence becomes natural and easy. Two distinct forms of belief now diverge, the one leading in the direction of the transmigration of souls, the other maintaining the independent existence of the personal soul after the death of the body. Among the lower races, the moral element in the doctrine of a future life is almost wholly wanting.

Judaism.—There are but few allusions to a future life in the Old Testament. The most notable one is, "And many of them that sleep in the dust of the earth shall awake, some to everlasting life, and some to shame and everlasting contempt. And they that be wise shall shine as the brightness of the firmament; and they that turn many to righteousness as the stars forever and ever" (Dan. xii: 2, 3), in which the doctrine seems to be not simply the immortality of the soul, but the resurrection of the body.

Christianity.—"Jesus Christ," says St. Paul, "hath abolished death, and hath brought life and immortality to light through the gospel" (II Tim. i: 10). The doctrine in this case is not merely that of the immortality of the soul, not transmigrated, but retaining its separate individuality. There is super-added to this the resurrection and transformation of the body. The moral element in the doctrine of a future life is here all in all.

Fyffe, Charles Alan, an English historian; born in Blackheath, Kent, England, in December, 1845; was graduated at Oxford in 1868; and was called to the bar in 1876, but never practised. As correspondent of the "Daily News" during the Franco-Prussian War he is said to have sent to that journal the first account of the battle of Sedan that appeared in print. On account of a false charge, he became depressed and committed suicide. His historical works are distinguished by accuracy and a pleasing, perspicuous style. He died Feb. 19, 1892.

Fylfot, this symbol, like the cross of which it is in all probability a modification, is confined to no one religion, but is common to the great majority. In India the well-known sign of the fylfot is the Swastika of the Buddhists; in Greece we find it as stamped on coins and painted on urns; on the breast of an Etruscan sphinx it assumes a shape like the arms of Man, with a fourth leg added; four different forms of it are found on as many cinerary urns discovered under a bed of volcanic tufa on the Alban Mount; again we meet with it as the cruciform hammer of Thor, and sculptured on Runic monuments. In some of its forms it resembles the crux ansata of the Egyptians, and it was in use among the early inhabitants of South America. When the fylfot occurs in Asia Minor, Greece, Etruria, or Latium, it is probably connected with some system of phallic worship; but it has not, in all cases, a religious significance. Greenwell, speaking of pottery ornamented with crosses found in British barrows, considers this pattern to be the natural result of dividing a given space into four equal parts, though in one case, he says, the marking "almost assumes the form of the fylfot." Dawkins ("Early Man in Britain") figures pottery marked with this emblem, and says of the pottery of the late Bronze Age in France, that "sometimes it is ornamented . . . with the mystic fylfot."

G

G g, the seventh letter in the English alphabet.

Gaal (Hebrew, contempt), son of Ebed (Judges ix: 26–41), perhaps a descendant of Hamor, the father of Shechem (Gen. xxxiv: 2–6). He joined the Shechemites when revolting against Abimelech, son of Gideon, inflamed their passions, and led them to battle, but was defeated and excluded from the city.

Gabbatha (Hebrew, high or elevated), the name of a place in front of Pilate's palace, whence he pronounced sentence against Jesus Christ (John xix: 13). It was not the usual judgment hall, which the Jews could not enter, but some place in the vicinity of the palace.

Gabelentz, Hans Conon von der, a German philologist; born in Altenburg, Germany, Oct. 13, 1807. Gabelentz knew upward of 80 languages. He died Sept. 3, 1874. His son, Hans Georg Conon, born in 1840, held the chair of Eastern Asiatic Tongues in Leipsic University, and wrote many books on Chinese, Melanesian, Basque, Berber, etc. He died in Berlin, Dec. 11, 1893.

Gabelle, in France, a term originally applied to any tax or impost laid on commodities, but which afterward came to be specially applied to a duty on salt. This salt tax was first established toward the end of the 13th century, in the reign of Philip IV. It was finally abolished in 1789.

Gabelsberger, Franz Xavier, the inventor of the system of shorthand most used in German-speaking countries; born in Munich, Bavaria, Feb. 9, 1789. He acted as ministerial secretary in the statistical office of the Bavarian finance department from 1826 till his death. The summoning of a parliament for Bavaria in 1819 led Gabelsberger to adapt the shorthand system which he had invented for his own private use to the purpose of reporting the proceedings of the parliament. His system is now used for reporting parliamentary proceedings in most of the countries in which German is the official language; and it has also been adapted to the languages of several countries outside of Germany. He died Jan. 4, 1849.

Gaberlunzie, an old Scotch term for a beggar, from his wallet.

Gabion, in fortification, a cylindrical basket, left open at the top and bottom, and used for revetting the interior slopes of a battery and other field works. It is 3 feet in height, 2 feet in diameter, and weighs 40 pounds. The wicker gabion is the most useful for battery purposes, being far superior to one of iron.

Gaboon, a French colony on the W. coast of Africa between the Atlantic and the middle Kongo. Its area is estimated at 173,700 square miles. The interior has not yet been fully explored; certain parts are fertile and rich in natural resources. Among the exports figure timber, gum, ivory, gutta-percha, palm oil and kernels, earth nuts, sesamum, and malachite; other products are brown hematite, quicksilver, sugar cane, cotton, and bananas. All agricultural operations are performed by the women. The coast tribes engage in trade, which is particularly active around Loango in the S. W. and on the Gaboon. Administratively the Gaboon districts belong to the colony of Senegambia.

Gaboriau, Emile, a French writer of detective stories; born in Saujon, Charente-Inferieure, France, Nov. 9,

1835. His early years were a succession of vicissitudes; the army, the law, and even the Church, were in turn the objects of his inconstant attentions till at last he wrote his way to fame and fortune in 1866. He died in Paris, Sept. 28, 1873.

Gabriac, Paul Joseph de Cadoine, Marquis de, a French diplomatist; born in Heidelberg, Baden, March 1, 1792; was consul-general in New York in 1812-1814; appointed minister to Stockholm in 1823; and minister to Brazil in 1826. While in Brazil he induced all the other States in South America to adopt the French maritime law. He was created a peer in 1841, and made a senator in 1853. He died in Paris, June 12, 1865.

Gabriel (hero or man of God), in Biblical history, the angel who announced to Zacharias the birth of John, and to Mary the birth of the Saviour. In Jewish mythology he is one of the seven archangels.

Gabrielle d'Estrees, the daughter of Antoine d'Estrees, 40 years grand-master of artillery in France; born in 1571. Henry IV., visiting her father's chateau in 1590 fell in love with her, and she became his mistress, retaining his affection for many years, and enjoying the honors though not the title of queen. She received the title of Duchess of Beaufort. At Easter, 1599, Gabrielle was sent to Paris, the king observing the Easter ceremonies at Fontainebleau. She there died suddenly April 10, 1599; it has been suspected that she was poisoned.

Gachard, Louis Prosper, a writer on Belgian history; born in Paris, France, March 12, 1800. He died in Brussels, Dec. 24, 1885.

Gad, the seventh son of Jacob by Zilpah, the handmaid of Leah, and founder of an Israelitish tribe numbering at the exodus from Egypt over 40,000 fighting men. Nomadic by nature, and possessing large herds of cattle, they preferred to remain on the E. side of Jordan, and were reluctantly allowed to do so by Joshua on condition of assisting their countrymen in the conquest and subjugation of Canaan. The men of Gad were a stalwart fighting race — 11 of its heroes joined David at his greatest need.

Gadames, or **Ghadames** (the Cydamus of the Romans), the name of an oasis and town of Africa, situated on the N. border of the Sahara. The entire oasis is surrounded by a wall, which protects it from the sands of the desert. The streets are narrow and dark, being covered in to shield them from the sun's rays. The town is the entrepot for manufactures and foreign goods from Tripoli to the interior.

Gadfly, one who is always gadding about for pleasure; a seeker after gaiety. In entomology, a name given to certain two-winged flies. Their mouth has six bristles, which constitute a formidable proboscis or sucker, with which they suck the blood of cattle or of man. Also a name sometimes given to flies which attack cattle and horses, but not man. These give the horse the "bots," but they differ from what are commonly called "horse flies."

Gadhelic, of or pertaining to that branch of the Celtic race which includes the Gaels of Scotland, the Erse of Ireland, and the Manx of the Isle of Man, as distinguished from the Cymric branch, which includes the Welsh, Bretons, and Cornish.

Gadsden, Christopher, an American patriot; born in Charleston, S. C., in 1724; was educated in England; returned to the United States in 1741 and later engaged in business in Philadelphia; was a member of the first Colonial Congress which convened in New York in October, 1765; was also a member of the first Continental Congress which assembled in Philadelphia in 1774. He joined the American army as colonel at the beginning of the Revolution; was promoted Brigadier-General in September, 1776; was a prisoner for 42 weeks in Fort Augustine; and was elected governor of South Carolina in 1782, but refused to serve, owing to old age. He died in Charleston, S. C., Aug. 28, 1805.

Gadsden, James, an American diplomatist; born in Charleston, S. C., May 15, 1788; was graduated at Yale College in 1806; served with distinction in the War of 1812; and afterward took part in the campaign against the Seminole Indians. He was appointed minister to Mexico in 1853, and on Dec. 30 of that year negotiated the Gadsden Purchase which fixed a new boundary between Mexico and the United States. He died in Charleston, S. C., Dec. 25, 1858.

Gadsden Purchase, a treaty negotiated Dec. 30, 1853, by James Gadsden, by which a tract of 45,000 square miles, now included in the S. part of Arizona and New Mexico, was purchased by the United States from Mexico for the sum of $10,000,000.

Gadshill, a hill 3 miles N. W. of Rochester, England, on the road to Gravesend. It is commemorated in Shakespeare's play "Henry IV.," as the place where Falstaff had his encounter with the robbers and an inn at the place is called Falstaff's Inn. It is interesting in modern times for Gadshill Place, opposite the hill, which was long the residence of Charles Dickens and was the home in which he died.

Gadwall, or **Gadwell,** a large duck, called also the gray. It is of variegated color. It inhabits the marshes of this country and also in the N. and E. of Europe.

Gael, the name of a branch of the Celts inhabiting the Highlands of Scotland, Ireland, and the Isle of Man.

Gaelic, or **Erse, Language and Literature.** The language spoken by the Highlanders of Scotland is termed by them the Gaelic; but the name frequently given to it by the Lowlanders is Erse, or Ersh, evidently a corruption of Irish. It is a dialect of that great branch of the Celtic languages termed the Gwyddelian or Gaelic, and to which belong also the Irish and Manx, or that spoken in the Isle of Man. At the time of the Roman invasion, Celtic was the language generally spoken in Western Europe. The dialects of the Celtic still spoken, besides the three already mentioned, are the Welsh and the language of Brittany; while the Cornish, another dialect, though not now spoken, is preserved in books. The three dialects, the Irish, the Scottish-Gaelic, and the Manx, approach each other so nearly as to form, in fact, but one language, the peculiarities which distinguish them from each other not being sufficiently broad or vital to constitute either of them a distinct language.

It was not so many years ago that Gaelic in the United States was practically an unknown language, and on its native heaths in Ireland and among the Highlands of Scotland, while the spoken tongue was handed down from father to son the written language was a closed book to all but a few scholars. In very recent years a remarkable revival has taken place in the study of the ancient tongue, which some scholars have claimed to antedate the Greek and Sanskrit. Gaelic books have been written, Gaelic periodicals are on sale at the news stands, Gaelic professorships have been founded in the leading Universities in the United States as well as in the great schools in England, France and Germany. Gaelic sermons are now preached in three churches in Boston and there are more than 50 clubs in New York, Boston, and San Francisco, the purpose of which is to study and propagate the study of the Gaelic language and literature, and a conservative estimate places the number of Gaelic speaking people in this country at not less than 1,000,000. A remarkable feature of the revival is that from the United States where the movement started, the desire to study the ancient language has spread to Ireland where it had almost gone into decay. There during recent years the books published in Gaelic have outnumbered those printed in English by two to one.

Gaeta, a fortified seaport town of Southern Italy, province of Caserta. The town is regarded as one of the keys of Southern Italy, being strong from its natural position, which art has taken advantage of. In November, 1860, it withstood a siege of several weeks (as the last stronghold of Francis II., King of Naples, who had sought refuge within its walls) by the national troops commanded by General Cialdini.

Gage, Lyman Judson, an American financier; born in De Ruyter, N. Y., June 28, 1836, removed to Rome, N. Y., in 1848, and was educated at the Rome Academy. He worked in the Oneida Central Bank from 1853 to 1855, when he went to Chicago, becoming a clerk, and later, bookkeeper and cashier of a planing mill company. In 1868 he became cashier and in 1891 president of the First National Bank of Chicago. He was the first president of the Board of Directors of the World's Columbian Exposition, and several times president of the American Bankers' Association and the Civic Federation of Chicago. On March 5, 1897, he was appointed Secretary of the Treasury, by President McKinley; in 1901 was reappointed; and at the end of that year resigned to take effect in March, 1902.

Gage, Thomas, a British general; born in 1721. He fought with the British troops in America in 1755, 1758, and 1760; was commander-in-chief in North America in 1775, and returned to England the same year. He was promoted general in 1782. The battles of Lexington and Bunker Hill took place during his generalship. He died April 2, 1787.

Gage, William Leonard, an American clergyman and author; born in Loudon, N. H., in 1832. He was the pastor of a Congregational Church at Hartford, Conn., from 1866 to 1884. He died in 1889.

Gagern, Heinrich Wilhelm August, Baron of, a German statesman; born in Beyrout, Bavaria, Aug. 20, 1799. On Napoleon's return from Elba he entered the army of Nassau, and served as lieutenant at Waterloo. After the peace he studied law at the universities of Heidelberg, Gottingen, Jena; and Geneva; in 1821 entered political life under the government of Grand-ducal Hesse. In 1850 he served as major in the Schleswig-Holstein War; when the campaign was over he retired to the Monsheim estate, which had come into his possession at his father's death. In 1852 he removed to Heidelberg. He died in Darmstadt, Germany, May 22, 1880.

Gaillard, Claude Ferdinand, a French painter and engraver; born in Paris, France, Jan. 7, 1834. Gaillard gained three medals for engraving and one for painting, and was decorated with the Legion of Honor in 1876. He died in Paris, Jan. 19, 1887.

Gaines's Mill, a locality near Richmond, Va., noted as being the scene of many balloon ascensions during the Civil War (1861-1865). Near here occurred the battle of Cold Harbor, called also battle of Gaines's Mill, June 22, 1862, between a part of Lee's army and a part of McClellan's. Here, too, Lee repulsed Grant's assault, June 3, 1864.

Gainsborough, Thomas, an English portrait and landscape painter; born in Sudbury, Suffolk, England, in 1727. He was sent to London, at the age of 14, to study art under Gravelot, the excellent French engraver and designer of book illustrations, under Frank Hayman, and in the St. Martin's Lane Academy. He returned to his native county about 1744, established himself as a portrait painter at Ipswich, and in 1745 married Margaret Burr, a lady with £200 a year. In 1761 he began to exhibit with the Society of Artists of Great Britain, in Spring Gardens, London, a body which he continued to support till 1768, when he became a foundation member of the Royal Academy. In 1774, after a deadly quarrel with Thicknesse, he removed to London, and there prosecuted his art with splendid success, being in portraiture the only worthy rival of Reynolds, and in landscape of Wilson. An exhibition of over 200 of his works was brought together in the Grosvenor Gallery, London, in 1885. He died in London, Aug. 2, 1788.

Gairdner, Sir William Tennant, a Scottish physician; born in Edinburgh, Scotland, Nov. 8, 1824. He was graduated M. D. at Edinburgh in 1845, becoming Fellow of the Royal College of Physicians there in 1850; was appointed by the crown in 1862 to the chair of practice of medicine in Glasgow University, was president of the Medical Association there in 1888, and was physician in ordinary to the queen for Scotland. He has contributed many valuable papers to the special medical journals.

Gaius, a Roman jurist, who flourished between 130 and 180 A. D. Before the revision of the Roman laws, and the reform of legal studies by Justinian, the "Institutes" of Gaius, as well as four other of his treatises, were the received text-books of the schools of law. His "Institutes," moreover, formed the groundwork of the "Institutes" of Justinian. The "Institutes" was almost completely lost, till in 1816 Niebuhr discovered it at Verona, under a palimpsest of the "Epistles" of Jerome. This discovery threw a flood of light on the history of the early development of Roman law, especially on the forms of procedure in civil actions.

Gaius, in Scripture, (1) a Macedonian who accompanied Paul in his travels, and whose life was in danger at Ephesus (Acts xix: 29). (2) A Corinthian convert of Paul, who hospitably entertained the apostle while laboring at Corinth (Rom. xvi: 23; I Cor. i: 14). (3) Of Derbe; an attendant of Paul from Corinth, in his last journey to Jerusalem (Acts xx: 4). The third epistle of John is addressed "to the well-beloved Gaius," whose character for hospitality comports well with that of (2) above. The name was a common one wherever the Romans lived.

Galapagos (Spanish, "tortoises"), a group of 13 islands of volcanic origin in the North Pacific Ocean, about 600 miles W. of the coast of Ecuador, to which they belong; area, 2,950 square miles. The most important is Albemarle, 60 miles long by 15 broad, and rising 4,700 feet above the sea.

Galatea, or **Galathæa,** in Greek mythology, a sea-nymph, daughter of Nereus and Doris.

Galatia, in ancient geography, a country of Asia Minor, lying S. of Paphlagonia, W. of Pontus, and N. E. of Phrygia. It was originally a part of Phrygia, but the Gauls or Celts, having invaded Asia in several bodies, conquered and settled in this country about B. C. 241, whence the name.

Galatian, a native or inhabitant of Galatia. St. Paul's Epistle to the Galatians, a New Testament epistle, stated in ch. i: 1 to have been written by the Apostle Paul, a claim admitted by the ancient Church universally, and by nearly all the ablest modern critics. It is one of the four epistles considered by Ferdinand Baur as genuine. St. Paul, who generally, it appears, used an amanuensis, wrote this epistle with his own hand (vi: 11). It was penned just after a visit by the apostle to the Galatian Church (i: 6). Two such visits had taken place; the first, during which he founded the Galatian Church, was about A. D. 51 (Acts xvi: 6); and the second was about A. D. 55 (Acts xviii: 23). In ch. iv: 16–13 a first visit is alluded to, implying that there had been a second. The epistle, then, was not penned till at least A. D. 55, and probably not till A. D. 57 or 58, during the first part of the apostle's residence at Ephesus (Acts xix: 1, 10). The subscription at the end of the epistle which shows that it was written from Rome, though accepted by Baur, is rejected by most critics. The Galatian Church consisted mainly of Gentile converts. On these Paul did not impose the yoke of the Mosaic ritual, though he was willing to tolerate its use among the Jewish proselytes. No sooner had he departed, however, than Judaizing teachers appeared in the Galatian Church, represented that Paul was not on a level with the apostles originally chosen, but a mere subordinate agent whom they had sent forth; that his teaching with regard to the law of Moses was in conflict with that of Peter, and that circumcision was indispensably necessary to salvation. In reply to these teachers, Paul showed that he was a real apostle (i: 15, etc.), and that he met the other apostles on such a footing of equality that on one occasion he had withstood Peter to the face when he was to be blamed (ii: 11–14, etc.). He reproaches them for their fickleness in so quickly turning from the pure to the perverted gospel (i: 6–9; iii: 1, etc.), exhorts them not to relapse from Christian liberty into the bondage of Judaism (iii., iv., v.), and concludes with practical exhortations (vi.).

Galatz, or **Galacz,** a river port of Moldavia, the center of the commerce of Rumania, situated on the left bank of the Danube, 85 miles from its mouth. The town has been since 1856 the seat of the International Danube Commission. Galatz has frequently been taken in the wars between the Russians and Turks since 1789. It ceased to be a free port in 1883. Pop. 62,678.

Galaxy, in astronomy, the Milky Way. It constitutes nearly a great circle inclined to the equinoctial at an angle of about 63°. The milky appearance of the great belt or zone now described arises from the blended light of countless multitudes of stars, each doubtless a sun to some system of planets. Sir William Herschel estimated that at one portion of the

Milky Way 116,000 stars passed through the field of the telescope in a quarter of an hour, and on another occasion 258,000 stars in 41 minutes. Here and there the Milky Way divides, especially at one spot, where there is a separation into two portions, somewhat resembling the projecting sides of a fish tail. Sir W. Herschel believes that stars are not scattered at tolerably uniform intervals through space, but are congregated at particular spots. Sometimes also called colloquially Jacob's Ladder.

Galba, Servius Sulpicius, a Roman emperor, successor of Nero; born Dec. 24, 3 B. C. After his election he soon made himself unpopular by cruelty and avarice, and he was slain in the forum, Jan. 15, A. D. 69.

Gale College, a coeducational institution in Galesville, Wis., founded in 1844 under the auspices of the Presbyterian Church.

Galen, or **Claudius Galenus,** a celebrated Greek physician; born in Pergamus, Mysia, in A. D. 131. In his 19th year he began the study of medicine, first at Pergamus, afterward at Smyrna, Corinth, and Alexandria.

He gathered up all the medical knowledge of his time and fixed it on such a firm foundation of truth that it continued to be, as he left it, the authoritative account of the science for centuries. His physiology does not, according to modern ideas, attain the same level of scientific excellence as his anatomy. He is said to have died in Sicily about A. D. 201.

Galena, the sulphide of lead, found both in masses and crystallized in cubes, but sometimes in truncated octahedra. In the United States it is very abundant, the deposit of galena, in which the mines of Illinois are situated being the most extensive and important hitherto discovered.

Galena, a city and county-seat of Jo Daviess co., Ill. It is noted as an early residence of General Grant and received its name from the numerous lead mines in the vicinity.

Galenists, an Anabaptist sect, one of two into which the Waterlanders split in 1664. Galen, their founder, is said to have taught that the Christian religion was not so much a body of truths to be believed as of principles to be obeyed. His enemies accused him of having socinian proclivities, a charge from which the states-general acquitted him Sept. 14, 1663.

Galerius, or **Galerius Valerius Maximianus,** a Roman emperor; born of humble parentage near Sardica, Dacia. Entering the imperial army, he rose rapidly to the highest ranks. In 292 Diocletian conferred on him the title of Cæsar and gave him his daughter in marriage. On the abdication of Diocletian (305) he and Constantius Chlorus became joint rulers of the Roman empire, Galerius taking the E. half. When Constantius died in York (306) the troops in Britain and Gaul immediately transferred their allegiance to his son, Constantine (afterward Constantine the Great). Galerius, however, retained possession of the E. till his death. He died in 311 A. D.

Gales, Joseph, an American journalist; born in England in 1760; settled in Philadelphia, Pa., in 1793; became editor of the "Independent Gazetteer," in which he first issued shorthand reports of Congressional debates. He was an active supporter of the American Colonization Society. He died in Raleigh, N. C., Aug. 24, 1841.

Gales, Joseph, an American journalist; born in Eckington, England, April 10, 1786; son of Joseph Gales; received a collegiate education. Had it not been for the industry of Gales and his partner, William Winston Seaton, an important part of the proceedings of the Senate and House of Representatives which they reported would not have been preserved. Especially is this true of the great debate between Hayne and Webster. During the War of 1812 the property of the paper, with a valuable editorial library, was destroyed by the British. Gales died in Washington, D. C., July 21, 1860.

Galicia, formerly a kingdom and afterward a province in Spain, bounded N. and W. by the Atlantic, S. by Portugal, and E. by Leon and Asturias, with an area of 11,340 square miles. The principal towns are Santiago di Compostella and the two strongly fortified seaports Coruna and Ferrol. Galicia was a kingdom under the Suevi from 411 to 585, and again from 1060 to 1071, at which date it was finally incorporated with Leon and Castile.

Galicia, Kingdom of, a province of Austria, bounded by Russia, Bukowina, Hungary, and Moravia; area 30,307 square miles; pop., Polish in the W., Russniak in the E. (1900) 7,315,816. The great physical features of the country are, in a manner determined by the Carpathians, which form a long and irregular curve on the S. and send out branches into Galicia. Farther to the N. the hills subside rapidly and finally merge into vast plains. Distilleries exist in every quarter. The Roman Catholics and the Greek Catholics are the chief religious bodies. The chief educational establishments are the University of Lemberg and that of Cracow. The principal towns are Lemberg, the capital, and Cracow. Manufactures have not as yet made any great progress.

After being the field of continuous strife between Russians, Poles, and Hungarians, Galicia continued a Polish dependency from 1382 till the first partition of Poland, in 1772, when it was acquired by Austria. Galicia is now one of the Cis-Leithan provinces of the Austrian empire, and is represented in the Reichsrath by 63 deputies, while the affairs peculiar to itself are deliberated and determined on by its own Landtag or Diet. Polish is the language of official intercourse and of the higher educational institutions.

Galilean, or **Galilæan,** one of the followers of Judas the Gaulonite, who resisted the payment of the tax imposed by Quirinius, the Cyrenius of St. Luke (Luke ii: 1), and gave the Romans trouble till the capture of Jerusalem by Titus in A. D. 70. The Galileans, a name applied to Jesus and His disciples, from the intimate connection they had with Galilee (Matt. xxvi: 69; Mark xiv: 70); hence applied by pagans and Mohammedans, as a term of reproach to Christians generally.

Galilee, a Roman province, comprehending all the N. of Palestine W. of the Jordan. In the New Testament times the word had the more extended meaning, and we learn from Josephus that there were an Upper and a Lower Galilee.

Galilee, Sea of, called also in the New Testament Lake of Gennesaret and Sea of Tiberias, and in the Old Testament Sea of Chinnereth or Cinneroth, a large lake in the N. half of Palestine. Lying 626 feet below sea level, it is 13 miles long by 6 broad, and 820 feet deep. It occupies the bottom of a great basin, and is undoubtedly of volcanic origin. In the time of Jesus the region round about was the most densely populated in Galilee; now even its fisheries are almost entirely neglected.

Galilei, Galileo, commonly called **Galileo,** a distinguished Italian physicist; born in Pisa, Italy, Feb. 18, 1564. Later Cosmo III. invited him to Pisa, and soon after called him to Florence, with the title of principal mathematician and philosopher to the grand-duke. Galileo had heard of the invention of the telescope by Jansen; and making one for himself, a series of most important astronomical discoveries followed. He found that the moon, like the earth, has an uneven surface, and he taught his scholars to measure the height of its mountains by their shadow. A particular nebula he resolved into individual stars; but his most remarkable discoveries were Jupiter's satellites, Saturn's ring, the sun's spots, and the starry nature of the Milky Way. The result of his discoveries was his decided conviction of the truth of the Copernican system; though the blind and furious bigotry of the monks charged him with heresy for it, and he was twice persecuted by the Inquisition, first in 1615, and again in 1633. On both occasions he was compelled to abjure the system of Copernicus; but it is said that, in the last instance, when he had repeated the abjuration, he stamped his foot on the earth, indignantly muttering, " Yet it moves! " In the following year, when he was 70 years old, and his health was declining, a very heavy blow fell on him by the death of his beloved daughter, Maria, who would have sweetly soothed him in his enforced retirement. Two years later he became blind. He bore this affliction, to him of unusual severity, with great patience. His later years were spent near Florence, devoting himself to the perfecting of his telescope. His greatest work is the "Dialogue on the Copernican and Ptolemaic Systems." He died in Arcetri, near Florence, Italy, Jan. 8, 1642 (the year Newton was born). His remains were ultimately deposited in the Church of Santa Croce at Florence.

Galiot, Galleot, or **Galliot,** formerly a galley propelled by sails and oars, having one mast and 16 to 20 seats for rowers; used by most of the maritime nations of continental Europe, and called by substantially the same name in the Romance languages. Now a strong and cumbrous, bluff-bowed, two-masted vessel, used in the Dutch service.

Galitzin, Gallitzin, Galyzin, or **Golyzin,** one of the most powerful and distinguished Russian families, whose members have been equally prominent in war and diplomacy from the 16th century downward. Prince Dimitri Alexeievitch, a Russian diplomat and statesman; born Dec. 21, 1738; was ambassador to the court of France in 1763, and to The Hague in 1773. He was in correspondence with Voltaire and other literary men of his day and was the author of several works relating to geology. He died in Brunswick, Germany, March 21, 1803. Dimitri Augustine, son of the foregoing; born in The Hague, Dec. 22, 1770; became a Roman Catholic in his 17th year; and was ordained a priest in the United States by Bishop Carroll of Baltimore in 1795; He declined to return to Russia on his father's death, and as a Catholic priest was adjudged to have lost his right of inheritance. He wrote various controversial works. He died in Loretta, Pa., May 6, 1841.

Gall, a morbid excrescence on the leaf or leaf-bud of any plant, arising probably from the puncture of a cynips. In the hole made by the insect, an egg is deposited, in due time to be developed into a larva, which eats its way out when it comes to the perfect state. One variety is white or yellow, another green, gray, or black. The best galls come from Smyrna and Aleppo. With the salts of iron they should yield a fine black color, and are used in the manufacture of ink.

Gall-nuts are useful on account of the tannin and gallic acid contained in them. Tannin is a powerful astringent, and is useful in affections of the alimentary canal, also applied locally to suppress hemorrhage from the gums, lips, nose, etc.

Gall, Franz Joseph, founder of phrenology; born in Tiefenbronn, Baden, Germany, March 9, 1758. He studied medicine at Strasburg and Vienna, and settled in the latter city in 1785 as a physician. In 1796 he began to give courses of lectures on Phrenology in Vienna; but the lectures were prohibited in 1802 by the Austrian government as being subversive of the accepted religion. With Spurzheim, who became his associate in 1804, he quitted Vienna in 1805, and began a lecturing tour through Germany, Holland, Sweden, and Switzerland. He reached the height of his fame when in 1807 he settled as a physician in Paris. He continued to practise medicine and pursue his researches at Montrouge, near Paris, till his death, Aug. 22, 1828.

Gall, St., an Irish monk of the 6th and 7th centuries; born in Ireland, about 550. He was educated at the monastery of Bangor, accompanied St. Columba to France about 585, and took part with him in all his missionary labors. Banished from France, they went together into the wilder regions of Switzerland, and near the Lake of Constance they founded the monastery which bore the name St. Gall and gave name to the town and canton of St. Gall. He died in St. Gall, Switzerland, about 645.

Gall, St., a canton in the E. part of Switzerland, occupying the 14th place in the Swiss Confederation. St. Gall is one of the principal Swiss manufacturing cantons; as many as 60,000 of its inhabitants are stated to be employed in its manufactures of cotton fabrics, thread, linens, glass, wax, etc. Chief town, St. Gall, the capital. Pop. (1900) 250,285.

Gallstone, in man, a biliary concretion, chiefly consisting of cholesterine and coloring matter, forming in the gall-bladder. They occur most frequently in advanced life.

Gallait, Louis, a Belgian historical painter; born in Tournai, Belgium, May 10, 1810; died in Brussels, Nov. 20, 1887.

Galla Ox, or **Sanga,** a remarkable species or variety of ox inhabiting Abyssinia. The chief peculiarity is the extraordinary size of the horns, which rise from the forehead with an outward and then an inward curve, producing a lyre-shaped figure.

Gallardo, Aurelio Luis, a Mexican poet; born in Leon, Guanajuato, Mexico, Nov. 3, 1831. He wrote many comedies. He died in Napa, Cal., Nov. 27, 1869.

Gallas, a race of people inhabiting that part of Africa which lies to the S. and W. of Harar and S. of Shoa, between lat. 9° and 3° S. and lon. 34° and 44° E. The best authorities regard them as belonging to the Ethiopic branch of the Hamites, and their language as a descendant of the ancient Geez of Abyssinia. Individually they are of average stature, with strong, well-made limbs, skin of a light chocolate brown, hair frizzled but not woolly. Though cruel in war they are of frank disposition, and faithfully keep their promises and obligations. They are distinguished for their energy, both physical and mental. They are mostly heathens, though Mohammedanism is rapidly making way among them. The more N. tribes who dwell about Harar profess a form of Christianity, derived from Abyssinia. The total Galla population, who call themselves Argatta or Oromo, is estimated at about 3,000,000. Politically they are divided into a great number of separate tribes, which are frequently at war with one another. But their inveterate foes are the Somali, who have gradually driven back the Gallas from the shores of the Red Sea and the extremities of the Somali peninsula, regions which were occupied by them in the 16th century. The country they now inhabit is a plateau that slopes to the Indian Ocean, and has a hilly, well-timbered surface. Its average elevation is 7,200 feet. Among all the W. tribes inhabiting this region slavery is a recognized institution.

Gallatin, Albert, an American financier; born in Geneva, Switzerland, Jan. 29, 1761. He was graduated at the university there in 1779. In 1780 he came to the United States. In 1786 he removed to Pennsylvania, became a member of the State Legislature, and in 1793 he was elected to the United States Senate, but was declared ineligible. From 1795 to 1801 he served in the House of Representatives, and from 1801 to 1813 he was Secretary of the Treasury, in which post he showed himself one of the first financiers of his day. He took an important part in the negotiations for peace with England in 1814, and signed the treaty of Ghent. From 1815 to 1823 he was minister at Paris, and in 1826 he was sent to London as ambassador extraordinary. On his return in 1827 he settled in New York, and devoted much of his time to literature. He was one of the founders and the first president of the Ethnological Society of America; and from 1843 to his death he was president of the New York Historical Society. He died in Astoria, N. Y., Aug. 12, 1849.

Gallaudet, Edward Miner, an American educator; born in Hartford, Conn., Feb. 5, 1837; son of Thomas Hopkins Gallaudet; was graduated at Trinity College in 1856. He organized the Columbia Institute for the Deaf, Dumb and Blind in Washington, D. C., in 1857, and from it developed the Gallaudet College for the Deaf, in 1864 becoming its first president.

Gallaudet, Thomas, an American clergyman; born in Hartford, Conn., June 3, 1822; a son of Thomas Hopkins Gallaudet; was graduated at Trinity College in 1842; teacher in the New York Institution for Deaf Mutes in 1843–1858; ordained in 1851; founded and became rector of St. Ann's Church, New York, for deaf-mutes in 1852; appointed general manager of the Protestant Episcopal Church Mission to Deaf-Mutes in 1872; pastor of the Sisterhood of the Good Shepherd in 1869; chaplain of the Midnight Mission in 1871; founded the Gallaudet Home for Deaf-Mutes, near Newburg, N. Y., in 1885.

Gallaudet, Thomas Hopkins, an American educator; born in Philadelphia, Pa., Dec. 10, 1787. In 1817 he founded at Hartford, Conn., the first deaf-mute institution in America, and was president of the same till 1830. In 1838 he became chaplain of the Insane Asylum at Middletown, Conn., where he remained till his death, in Hartford, Conn., Sept. 9, 1851.

Galle, or **Point de Galle,** a fortified town and seaport of the S. W. extremity of the island of Ceylon, on a low rocky promontory of the same name.

Galle, Johann Gottfried, a German astronomer; born in Pabsthaus, Prussia, June 9, 1812; studied natural sciences and mathematics. He was the first to observe the planet Neptune (Sept. 23, 1846).

Gallego, Juan Nicasio, a Spanish lyric poet; born in Zamora, Spain, Dec. 14, 1777; died in Madrid, Jan. 9, 1853.

Gallegos, a river of Patagonia entering the Atlantic Ocean opposite the Falkland Islands. It is small but very rapid, and at its mouth or estuary the tide rises 46 feet.

Gallenga, Antonio Carlo Napoleon, an Italian publicist and author; born in Parma, Italy, Nov. 4, 1810. He left Italy in 1831 by reason of political disturbances, and lived abroad.

Galleon, a large kind of vessel, with three masts and three or four decks, formerly used by the Spanish in their commerce with South America, to transport the precious metals.

Gallery, in architecture, a long, narrow room, the width of which is at least three times less than its length. Galleries are not destined to be occupied as sitting rooms, but for dancing, music, dining on festival occasions; and are generally decorated with pictures in oil or fresco. The term is also applied to a platform projecting from the walls of a building supported by piers, and in churches, theaters, and similar buildings, to the upper floors going around the building next the wall. Also applied to a collection of pictures.

Galley. (1) A low, flat-built vessel with one or more rows or banks of oars, said to have been invented by the Corinthians in 700 B. C. (2) A clinker-built boat for ship's use, from 23 to 36 feet long, and with a beam equal to one-fifth of its length. It is light and sharp, carrying from 10 to 12 oars, and is used for speedy rowing on expeditions. It usually has six alternate oars rowed by a picked crew. (3) The cook house on board ship, which is on deck, or in a forward part of the vessel. (4) In printing, an oblong tray which receives matter from the composing-stick, and on which it is arranged in a column or page.

Galley Bird, the green woodpecker of Europe; the spotted variety is also known as the galley bird.

Galley Slave, a person condemned to work at the oar on board a galley, being chained to the deck. This mode of punishment was common in France previous to 1748.

Gallfly, or **Gallwasp,** names generally applied to any member of a large family of hymenopterous insects, most of the females of which lay their eggs in plants and by the associated irritation produce galls. The insects are not unlike little wasps with straight, thread-like antennæ, laterally compressed abdomen, and long wings.

Gallican Church, the distinctive title of the Roman Catholic Church in France. The Christian faith was widely diffused in France or Gaul, even during the lifetime of the apostles; and it especially flourished among the descendants of the Greek colonies of the S., and in the numerous towns and cities on the Rhone and its confluent rivers. In the persecutions to which the early professors of Christianity were subjected, the Christians of these churches had their full share. The hierarchical organization also of the Church of Gaul was, at a very early period, among the most complete and regular throughout the churches of Western Christendom; and in the council at Arles in 314 may be recognized the titles of many bishops of sees still represented in the catalogue of the French episcopacy. The Gallican Church underwent very extensive modifications at the close of the 18th and the beginning of the 19th century, not merely by the enactment of what was called the "civil constitution of the clergy," but by the concordat of Pius VII. with Bonaparte, which reduced the number of sees, brought the ecclesiastical divisions of the country into harmony with its new political distribution into departments, diminished the number of festivals, and confirmed the suppression of the ancient religious establishments, and confiscation of the church property.

Gallifet, Gaston Alexandre Auguste, Marquis de, a French general; born in Paris, France, Jan. 23, 1830. He joined the army in April, 1848, and became colonel in December, 1867. He served in the Crimea, Mexico, and Algeria. He commanded the 3d Regiment of Chasseurs d'Afrique, took part with the Army of the Rhine during the Franco-German War. During the second siege of Paris he commanded a brigade of the Army of Versailles. In 1872 he was sent to Africa and placed at the head of the subdivision of Batna. He took charge of the expedition on El-Goliah, and executed a rapid march through a desert country and severely punished the revolted tribes (December, 1872–March, 1897). On the general reorganization of the army, he was named to the command of the 3d Brigade of Infantry of the 8th Army Corps. Promoted to the rank of General of Division, May 3, 1875, he obtained the command of the 1st Division of Cavalry, and in February, 1879, that of the 9th Regiment. He was decorated with the Legion of Honor in June, 1855, made officer, April, 1863, and commander, April, 1873. He was Member of the Council of War in 1885, and became Minister of War in 1899, retiring in 1902.

Gallio, Junius Annæus, the Roman pro-consul of Achaia under Claudius when St. Paul was at Corinth A. D. 53. He was brother of the famous Seneca, and had procured his name by adoption into the family of Gallio the rhetorician. He resigned the government of Achaia and later is said to have been put to death by Nero.

Galliot, a Dutch vessel carrying a main and a mizzen mast and a large gaff-mainsail. Galliots were formerly used as bomb-vessels.

Gallipoli, a town of Southern Italy, built on a steep rock in the Gulf of Taranto, connected with the mainland by a bridge, and 59 miles S. of Brindisi. The town is remarkable for its oil tanks, excavated in the solid rock, in which olive oil is deposited for exportation.

Gallipoli, a seaport of Turkey, on the peninsula of the same name (the ancient Thracian Chersonesus), at the N. E. extremity of the Dardanelles, 90 miles S. of Adrianople, and 130 W. S. W. of Constantinople. It was formerly the most important commercial town on the Hellespont, and still retains considerable trade. It is headquarters for the Turkish fleet.

Gallivat, a large rowboat, formerly and still to some extent, used in Eastern waters. They rarely exceed 70 tons, carry two masts with high triangular sails, and are generally armed with a few small swivel guns, fastened on the bulwarks.

Galliwasp, a small lizard found in the West Indies. It is an object of terror to the inhabitants, but is really harmless.

Galloway, Joseph, an American lawyer; born near West River, Md., about 1729; was admitted to the bar in Philadelphia; member of the Pennsylvania Assembly in 1757–1774. He held a seat in the Congress of 1774, where he suggested a plan of government headed by a president-general to be appointed by the king and to hold office during the latter's pleasure, and a grand council elected every three years by the assemblies of the several colonies. Before the conclusion of the Revolutionary War he removed to England; and in 1788 was charged with high treason by the Assembly of Pennsylvania, which ordered his estates to be sold. He died in Herts, England, Aug. 29, 1803.

Galloway, Mull of, a bold headland of precipitous rock, the extreme S. point of Scotland. It rises to a height of 210 feet at its E. extremity, on which stands a lighthouse 60 feet high, whose intermittent light is visible at a distance of 23 nautical miles.

Gallows, an instrument or apparatus on which criminals are executed by hanging.

Galop, a lively dance in 2-4 time, originally a separate and independent dance, but now also forming a portion of a set of quadrilles; also the music to which this dance is performed.

Galoparo, or **Capo di Faro,** the Charybdis of the ancients. It forms the whirlpool on the outside of the harbor of Messina, in the strait separating Italy from Sicily. Opposite, on the Italian coast, is the rock Scylla.

Gally, Merritt, an American inventor; born near Rochester, N. Y., Aug. 15, 1838; learned the printer's trade; was graduated at the University of Rochester in 1863; and later turned his attention to mechanics. His inventions include a printing press; a machine for making linotypes; electric, telegraphic and philosophical apparatus; musical instruments, etc., more than 400 in all.

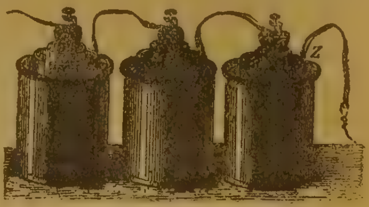
Galt, Sir Alexander Tilloch, a Canadian statesman; born in London, England, Sept. 6, 1817; went to Canada while still a boy; made a fortune in the service of the British and American Land Company; was Canadian minister of finance in 1858–1862, 1864–1866, and in 1867; and Canadian High Commissioner to England in 1880–1883. He died Sept. 19, 1893.

Galt, John, a Scotch novelist; born in Irvine, Ayrshire, Scotland, May 2, 1779; died in Greenock, April 11, 1839.

Galton, Francis, an English scientist; grandson of Dr. Erasmus Darwin, and cousin of Charles Darwin; born in Duddeston, England, in 1822. Having traveled in North Africa, he explored in 1850 lands hitherto unknown in South Africa, publishing his experiences in his "Narrative of an Explorer in Tropical South Africa." Later he specially devoted himself to the problem of heredity.

Galvani, Luigi, an Italian anatomist; born in Bologna, Italy, Sept. 9, 1737. He studied theology and subsequently medicine at the university there, and was elected Professor of Anatomy. His lectures enjoyed much popularity, and two treatises on the organs of hearing and on the genito-urinary tract in birds added to his reputation. But Galvani owes the wide celebrity attached to his name to his discoveries in animal electricity. He died in Bologna, Dec. 4, 1798.

Galvanism, the branch of electric science to which an experiment by Galvani gave birth. His wife, who was making soup from frogs, put them in proximity to a charged electrical machine. On touching them with a scalpel their legs became greatly convulsed. Galvani was told what had occurred, and repeated the experiment. He united the lumbar nerves of a dead frog with its crural muscles by a metallic circuit, and came to the erroneous conclusion that animal electricity existed in the nerves and muscles of frogs, etc., ignoring the connecting wire. His contemporary, Volta, gave attention to this, and found the contraction of the limbs more energetic when the connecting arc is made of two metals instead of one. He inferred that the metals took the active part in producing the contraction, and the electricity was due to their contact, and the animal parts constituted only a conductor. In 1793 he published these views, and in 1800 first described and constructed what has since been called after him the voltaic pile. Febroni, observing that the disks of zinc in the pile became oxidized in contact with acidulated water, considered that the oxidation was the chief cause why electricity was produced. Now voltaic plates have nearly given place to voltaic or galvanic batteries, of which there are many varieties.



GALVANIC BATTERY.

Galvanized Iron, iron coated with zinc.

Galvanometer, an instrument for detecting the presence and measuring the intensity of feeble galvanic currents. A differential galvanometer is an instrument designed to ascertain a difference in the intensity of two galvanic currents.

Galveston, city and county-seat of Galveston co., Tex., on Galveston Island, between Galveston Bay and the Gulf of Mexico. It has the largest and deepest harbor on the Gulf coast, with two miles of wharf front. The commerce of the city is very extensive, the chief export being cotton. Galveston was settled in 1837; captured by the Federal forces in 1862; and retaken by the Confederates in

1863. It was nearly destroyed by fire in 1885, and on Sept. 8, 1900, was visited by a violent tornado and flood, causing the loss of 7,000 lives and the destruction of property to the value of $30,000,000. Pop. (1900) 37,789.

Galway, a municipal and parliamentary borough of Ireland, a seaport and county of itself, at the mouth of the river Corrib, on the N. shore of Galway Bay. Pop. 13,746.

Galway Bay, a large bay on the W. coast of Ireland, about 30 miles in length and from 20 to 7 miles in breadth. Across its entrance lie the Aran Islands, and there are numerous small islands in the bay itself.

Gama, Dom Vasco da, a Portuguese navigator; born in Sines, a small seaport of Portugal, in 1450; was the first navigator who made the voyage to the East Indies by the Cape of Good Hope. On July 8, 1497, he set sail from Lisbon and on Nov. 22 doubled the Cape. In the beginning of 1498 he reached the E. coast of Africa, and March 10 entered the harbor of Mozambique. He left Mozambique on March 29, and arrived on April 24 at Mombaza. He reached Melinda on April 15, where the king gave him an experienced pilot and all the nautical information at his command. Holding his course straight across the Indian Ocean toward the coast of Malabar, Gama arrived in May at Calicut. On his arrival he was favorably received; but the Mohammedan merchants found means to disturb this amicable understanding. Gama restored it by his resolution and prudence. The Zamori, the Hindu sovereign of Calicut, afterward sent him a letter for King Emmanuel. In August he set out on his return journey, which occupied one year. On his arrival at the capital Gama was named Admiral of the Indies and received the title of Dom, with an annual pension and extensive privileges in Indian commerce. After he had remained 20 years in obscurity Gama was appointed Viceroy of India in 1524. He left the harbor of Lisbon with 14 vessels; he visited several small colonies, using all means in his power for their defense and the preservation of the authority of the Portuguese arms among the natives; but he had scarcely administered his office for the space of three months when he died in Goa, Dec. 24, 1524. In 1538 his body was brought to Portugal.

Gamaliel, the name of two persons mentioned in Bible history, of whom the first, Gamaliel, the son of Pedahzur (Num. i: 10), was prince or head of the tribe of Manasseh. The other and better known Gamaliel is mentioned twice in the Acts of the Apostles, as a learned doctor of the law, of the sect of the Pharisees. From Acts xxii: 3 we learn that he was the preceptor of St. Paul; the other reference (Acts v: 34) records his famous advice to the Sanhedrim as to their treatment of the apostles.

Gambetta, Leon Michel, a French statesman; born in Cahors, France, April 3, 1838. He was educated for the Church; but decided in favor of the law, and repairing to Paris became a member of the metropolitan bar in 1859. In November, 1868, he gained the leadership of the republican party. In 1869, having been elected by both Paris and Marseilles, he chose to represent the S. city; and in the Chamber of Deputies showed himself an irreconcilable opponent of the empire and its measures. On the downfall of the empire, in 1870, a government for national defense was formed, in which Gambetta was nominated Minister of the Interior. The Germans having encircled Paris, he left that city in a balloon, and set up his headquarters at Tours, from which, he for a short time organized a fierce but vain resistance against the invaders. After the close of the war he held office in several short-lived ministries, and in November, 1881, accepted the premiership. The sweeping changes proposed by him speedily brought a majority against him, and after a six weeks' tenure of office he had to resign. The accidental discharge of a pistol caused his death near Sevres, France, Dec. 31, 1882.

Gambia, a river of West Africa, rising in a mountainous district in Futa Jallon and flowing N. W. and W. to the Atlantic; length about 1,400 miles. It is navigable for 600 miles during seven months of the year, but from June to November the river becomes a torrent, rising from 20 to 50 feet and leaving a rich alluvial deposit on its shores.

Gambier, James Baron, an English naval officer; born in New Providence, the Bahamas, Oct. 13, 1756. He entered the navy, and attained the rank of Admiral of the Fleet in 1830, and died near Uxbridge, England, April 19, 1833.

Gambier Islands, a group of small coral islands in the South Pacific belonging to France. A French mission station was formed on the largest island, Mangareva, in 1834.

Gambling, playing at games of hazard or chance for money. Strictly speaking, gambling may be understood as gaming in its worst sense, and as implying professional play for a money stake by men who are unscrupulous adepts at so-called games of chance. In the United States statutes have been passed in most, if not in all the States, forbidding gambling for money.

Gamboge, or **Camboge** (a corruption of Cambodia, the name of the district in Annam where it is found), a gum resin obtained by piercing the bark of a tree growing in Cambodia, Siam, and the S. part of Cochin China. The juice is allowed to harden in bamboo reeds, hence it occurs in commerce in the form of pipes which are striated externally.

Gambrinus, a mythical king of Flanders, to whom is ascribed the invention of beer.

Game, any contrivance, arrangement, or institution designed to afford recreation, sport, or amusement.

Game Laws, laws relating to the killing of certain wild animals pursued for sport, and called game. In the United States the chief restrictions are in regard to killing wild animals during the breeding season. Formerly in Great Britain certain qualifications of rank or property were needed to constitute the right to kill game; but by the Game Act of William IV. the necessity for any qualification except the possession of a game certificate was abolished.

Gamut, a scale on which the notes in music are written or printed; it consists of lines and spaces, the notes printed on which are named after the first seven letters of the alphabet.

Gando, a kingdom of the Western Sudan, lying W. of Sokoto (to which it is tributary), and on both sides of the Niger as far S. as the mouth of the Benue; area, estimated, 78,457 square miles. Pop., estimated, 5,500,000. In 1900 it became a part of Nigeria. The inhabitants are mostly Haussa, but the ruling class are Fulahs; nearly all are Mohammedans. Gando, the capital, lies in a narrow valley surrounded and commanded by hilly chains, but the chief commercial town is Egga.

Ganges, a river of Hindustan, one of the greatest rivers of Asia, rising in the Himalaya Mountains, in Garhwal State, and formed by the junction of two head streams, the Bhagirathi and the Alaknanda, which unite at Deoprag, 10 miles below Srinagar, 1,500 feet above sea-level. The Ganges is navigable for boats of a large size nearly 1,500 miles from its mouth. It is an imperative duty of the Hindus to bathe in the Ganges, or at least to wash themselves with its water, and to distribute alms, on certain days. The Hindus believe that whoever dies on its banks and drinks of its water before death is exempted from the necessity of returning into this world. Its water is a considerable article of commerce in the remoter parts of India.

Ganges Canal, The, an important irrigation work and navigable channel, extending, on the right of the Ganges, from Hardwar to Cawnpur and Etawah. The main canal is 440 miles in length, and is navigable throughout; and there are 2,634 miles of distributaries.

Ganghofer, Ludwig, a German dramatist and novelist; born in Kaufbeuren, Bavaria, July 7, 1855. At first engaged in mechanics, he later embarked at Vienna, in literature.

Ganglion, in human anatomy, a small mass of vascular neurine, situated in the course of a nerve, and distinct both from the brain and from the spinal cord.

Gannal, Jean Nicolas, a French chemist; born in Saarlouis, Prussia, July 28, 1791; noted for his invention of the method of embalming by injection. He died in Paris in January, 1852.

Gannet, a bird found from the Arctic Sea to the Gulf of Mexico, about the size of a tame goose. It breeds in immense numbers on the rocky islands near the coast of Labrador.

Gannett, Henry, an American geographer; born in Bath, Me., Aug. 24, 1846; was graduated at the Lawrence Scientific School in 1869; became geographer of the United States Geological Survey in 1882; was geographer of the 10th, 11th, and 12th censuses, and of those taken by the War Department in Cuba and Porto Rico in 1899.

Gannett, William Channing, an American clergyman and author; born in Boston, Mass., March 13, 1840; was graduated at Harvard in 1860; held pastorates of several Unitarian churches throughout the West and East.

Gantlet, or **Gauntlet,** a punishment, in which a prisoner, stripped to his waist, had to run between two files of men armed with sticks or other instruments, with which they struck him as he passed.

Ganymede, in Greek mythology, the cup-bearer of Zeus. Ganymede was a favorite subject of ancient art, and in modern time has prompted the genius of Carstens and Thorwaldsen.

Garcia de Quevedo, Jose Heriberto, a South American author; born in Coro, Venezuela, in March, 1819. Educated in France and Spain, he settled in Paris, and was killed in the communard insurrection, 1871.

Garcia, Calixto, a Cuban patriot; born in Holguin, Cuba, Oct. 14, 1836; and took up the profession of law. In 1868 he organized the revolution which has since been called the "Ten Years' War." In the early part of that struggle the Cubans won great success and captured many towns. In recognition of his services Garcia was appointed a Brigadier-General and subsequently commander-in-chief of the Cuban army. On Sept. 3, 1873, he with 20 men was surrounded by 500 Spaniards. When he saw that he would fall into the hands of the enemy he placed a revolver in his mouth and fired. The ball came out through his forehead, which always showed a scar. On his recovery he was sent to Spain, where he was pardoned in 1878. Returning to Cuba, he again took u arms against Spain in what is know as the "Little War." Later he wa forced to surrender and a second tim sent to Madrid, where for 17 years h remained under the espionage of th police. He escaped in September 1895, by crossing into France an took passage for New York. On Jan 26, 1896, he led a successful filibustering expedition to Cuba. Later, whil planning a second expedition, he wa arrested by United States governmen officers, gave bail, which he forfeited and again landed in Cuba. Whe Santiago was taken by the American in 1898 he withdrew from the Cuba army. Subsequently, however, he accepted the new conditions. In November, 1898, he was sent to th United States as chairman of a commission authorized to lay before President McKinley the wishes of the Cuban leaders, but before accomplishin this duty he died in Washington, D C., Dec. 11, 1898. His remains received official and military honors i Washington.

Gard, a department in the S. o France, on the Mediterranean; bounded on the E. by the Rhone river area, 2,253 square miles, one-third o which is arable; pop. (1901) 418,470 It is watered mainly by the Rhone, an by its tributaries. The famou grapes of Gard have almost disappeared before the ravages of the phylloxera; and the production of win has sunk to less than a fourth o what it was before 1875. Chief city Nimes.

Garda, Lake of (the Lacus Benacus of the Romans), the largest lak of Italy, between Lombardy an Venetia, its N. end extending into th Austrian Tyrol. Situated 226 fee above sea-level, it has an area of 11 square miles, a length of 37 miles, breadth of 2 to 11 miles, and maximum depth of 967 feet. Its chie tributaries are the Sarca and Ponal and it is drained by the Mincio, tributary of the Po. The mild climate in the district of the lake, an the beauty of its vicinity, have cause its shores to be lined with beautifu villas; and the district between Garguano and Salo, called by the peopl La Riviera, passes for the warmes point in Northern Italy. Arco, near the head of the lake, is a favorite winter resort.

Garden. The earliest gardens of which there is any account are those of Solomon, which are described as having been of quadrangular form, surrounded by high walls. They contained aviaries, wells, and streams of water. The Greeks and Romans also had magnificent gardens. Gardening anguished in the Dark Ages, and began to flourish in Europe with the growth of wealth and ease. The United States has public and private gardens which will bear comparison with any in the world for beauty and utility.

Garde Nationale, a guard of rmed citizens instituted in Paris, July 13, 1789. At first it numbered 8,000 men, but was increased to 300,000 when it was organized throughout he whole country. Marquis de La-ayette was its first commander. It was reorganized by the Directory and y Napoleon, and again under the Bourbons and was dissolved in 1827. Under Louis Philippe it was resusitated and contributed to his overhrow. In 1851 the national guard was again reorganized, but in 1855 issolved. In 1870 the national guard f Paris was formed for the defense f the city against the Prussians. The esistance of a section of the guard o the decree of disarmament led to the ommunal war, at the close of which he guard was declared dissolved by he National Assembly (1871).

Garden City, a village on Long sland, N. Y.; 18 miles E. of New York city. It was founded by Alexnder T. Stewart as a residential own. It is the seat of the Protestant Episcopal bishop of Long Island, and ontains the Cathedral of the Incarnaon, having been erected as a memorial o Mr. Stewart by his widow.

Gardes Suisses, a body of guards nder the French kings. Both ofcers and men were Swiss. The guards ollowed in order of precedence after he French guards. Their attachment to the king made them obnoxous to the people during the revoution, and during the defense of the ouvre in August, 1792, they were massacred without mercy.

Gardiner, Stephen, an English prelate, believed to have been a son of Lionel, Bishop of Salisbury; born in Bury St. Edmunds, Suffolk, England, in 1483. He passed at this time by the name of Dr. Stephens. Having become secretary to Wolsey and a favorite with the king, he was dispatched to Rome in 1528 to forward Henry VIII.'s divorce, and on his return was appointed secretary of state, and in succession Archdeacon of Norwich and Leicester, and Bishop of Winchester. He supported the king in renouncing the authority of the Pope, but opposed the doctrines of the Reformation. He was successful in contriving the fall of Cromwell, but failed to injure Catherine Parr and fell into disfavor. During the reign of Edward he was imprisoned in the Fleet, deprived of his bishopric, and afterward imprisoned in the Tower, but Mary restored him to his bishopric and appointed him lord chancellor. He officiated at her coronation and marriage and became one of her chief advisers. He died in London, Nov. 12, 1555.

Garfield, James Abram, an American statesman, 20th President of the United States; born in Orange, O., Nov. 19, 1831. He was the youngest of four children, left by his father's death to be reared by his mother, from the age of infancy. The family home was a small log cabin in the Ohio "wilderness," a region now known as the Western Reserve. He went to school winters, and became an omnivorous reader, especially of the Bible. In the winter of 1849-1850 he attended a seminary at Chester, O., learned the trade of a carpenter during vacations, and was able to support himself in school from that time by his own exertions. In 1851 he entered an institute at Hiram, O. (now Hiram College), and went thence in 1854 to Williams College, having earned and saved $350 toward college expenses, and graduated in 1856. In 1857 he was made president of Hiram College, where he won reputation as an educator. In 1859 he was elected to the Ohio State senate. In 1861 he was commissioned lieutenant-colonel of the 42d regiment of Ohio volunteers, and handled the regiment so well that he was made a Brigadier in a few months. During the war he distinguished himself more or less at Middle Creek, Shiloh, Corinth, and Chickamauga. In 1863 he left the army to enter Congress, declining the offer of a division command under Thomas. He remained in Congress 16 years, taking active part in many important measures. In 1880 he was elected United States Senator from Ohio, but in June the Republican National Convention nominated him to the presidency, and he was elected in November. A controversy arose early in his administration over the Federal offices in New York, especially the office of collector of the port of New York city, which led to the resignation from the United States Senate of Roscoe Conkling and Thomas C. Platt, of New York, after a bitter and heated contest in the Senate over the confirmation of Garfield's appointees. On July 2, 1881, when passing through the Baltimore and Potomac passenger station in Washington, in company with Mr. James G. Blaine, to go on board a train, Garfield was shot by Charles J. Guiteau, a disappointed office-seeker, whose mind had been inflamed by the controversies described above. Garfield lived till Sept. 19, being cared for in a seaside residence at Elberon, N. J. His funeral was a state affair of great solemnity and pomp. In February, 1882, Mr. Blaine delivered a eulogy of Garfield before Congress. A beautiful monument was raised over his remains in Lake View cemetery overlooking Lake Erie, at Cleveland, O.

GARFISH.

Garfish, Seapike, or **Garpike,** a fish, known also as the sea needle, making its appearance a short time before the mackerel in their annu visit for spawning. The name garfi is also given to other species of E lone, and to a ganoid fish found in t fresh waters of America.

Gargle, a liquid application to t throat.

Gargoyle, Gargoil, or **Gurgoyl** in architecture, a quaintly-form head of a man or animal, employed a decorative spout for the rain wat from a roof.

Garhmukhtesar, an ancient tov in the Northwest Provinces of Indi on the Ganges, 26 miles S. E. Meerut, with four shrines dedicat to Ganga, and a great fair which a tracts 200,000 pilgrims. Pop. 7,30

Garhwal, a native State in t Northwest Provinces of India, on t borders of Tibet; area, 4,164 squa miles; pop. 241,242. Also the nar of a British district in the Northwe Provinces, next to independent Gar wal; area, 5,500 square miles; po 407,818. The native State is t cradle of both the Jumna and t Ganges.

Garibaldi, Giuseppe, an Itali patriot; born in Nice, France, July 1807. His father being a poor fish man he obtained little education, a for a number of years was a sailor various trading vessels. In 1834, l ing condemned to death for his sha in the schemes of Mazzini, he escap to Marseilles and finally went South America. In 1848 he return to Italy, raised a band of voluntee and harassed the Austrians till the establishment of Austrian suprema in Lombardy. He then retired Switzerland, but in the spring of 18 proceeded to Rome to support Mazzin republic. He was appointed to co mand the forces, but the odds we overwhelming, and after a desper defense of 30 days Garibaldi escap from Rome with 4,000 of his follo ers. In the course of his flight l wife Anita died from fatigue and p vations. He reached the United Sta and was for several years in comma of a merchant vessel. He then pu chased a part of the small island Caprera, off the N. coast of Sardin Latterly the subscriptions of his a mirers enabled him to become ow of the whole island.

In the war of 1859, in which Sar- linia recovered Lombardy, Garibaldi lid splendid service; and on the re- volt of the Sicilians in 1860 he crossed o the island, wrested it after a fierce truggle from the King of Naples, re- rossed to the mainland and occupied Naples, where he was proclaimed dic- ator of the Two Sicilies. He readily cquiesced in the annexation of the Two Sicilies to Italy, and declining all ionors retired to his island farm. In 864 he received an enthusiastic wel- ome in Great Britain. In 1866 he ommanded a volunteer force against he Austrians in the Italian Tyrol, but ailed to accomplish anything of con- equence. Next year he attempted he liberation of Rome, but was de- eated by the French and pontifical roops, and was imprisoned by the talian government, but soon par- oned. In 1870 he gave his services o the French republican government gainst the Germans. At the end of he war he was elected a member of he French assembly, but resigned nd returned to Caprera. Rome now ecame the capital of united Italy, and ere in January, 1875, Garibaldi took is seat in the Italian parliament. The atter part of his life was spent quiet- y at Caprera, where he died June 2, 882.

Garigliano (ancient Liris; in its pper course now called Liri), a river f Southern Italy, rising in the Abruz- i, W. of the former Lake of Fucino, nd flowing after a generally S. course f 90 miles, into the Gulf of Gaeta.

Garland, Augustus Hill, an merican lawyer; born near Coving- on, Tenn., June 11, 1832. He op- osed secession as a policy, but was fterward elected to the Confederate enate, which office he held till the lose of the war; in 1874 was elected overnor under the new constitution f Arkansas. In 1885 he became at- orney-general in the cabinet of Presi- ent Cleveland. He died in Washing- on, D. C., Jan. 26, 1899.

Garland, Hamlin, an American ory-writer; born in La Crosse, Wis., ept. 16, 1860.

Garlic, a species of onion cultiva- d in Europe since the year 1551. he leaves are grass-like and differ om those of the common onion in not being fistulous. The root is a compound bulb, consisting of several small bulbs enveloped by a common membrane. It differs from the onion only by being more powerful in its effects. It is much used as a seasoning in warm climates.

Garlic Pear, or **Garlick Pear,** a tree 30 or 40 feet high, bearing a fruit which has a smell of garlic. It grows in Jamaica.

Garman, Samuel, an American naturalist; born in Indiana Co., Pa., June 5, 1846; was graduated at the Illinois State Normal University in 1870; made assistant in herpetology and ichthyology in the Museum of Comparative Zoölogy, in Cambridge, Mass., in 1873.

Garnet, a beautiful mineral classed among the gems. It is generally of some shade of red, but is often brown, and sometimes green, yellow or black. Coarse garnets reduced to a powder are substituted for emery in some cases.

Garnet, Henry, an English Jesuit, chiefly remembered for his connection with the Gunpowder Plot; born in Heanor, Derbyshire, England, in 1555. At the time of the discovery of the plot he was present at the place of meeting and shortly afterward apprehended on suspicion. He was tried, condemned for treason, and executed in St. Paul's churchyard, London, May 3, 1606.

Garnett, James Mercer, an American philologist; born in Aldie, Va., April 24, 1840; was graduated at the University of Virginia in 1859; served in the Confederate army during the Civil War; was Professor of English Language and Literature in the University of Virginia in 1882–1896.

Garnett, Richard, an English philologist; born in Otley, Yorkshire, England, July 25, 1789. He had already tried commerce and the Church, when in 1838 he was appointed assistant keeper of printed books at the British Museum. One of the founders of the Philological Society, he contributed many striking papers to its "Proceedings." He died Sept. 27, 1850. Richard, his son, born in Lichfield, Feb. 27, 1835, was appointed in 1851 assistant in the printed book department of the British Museum.

Garonne (ancient Garumma), the principal river in the S. W. of France, rising within the Spanish frontier at the base of Mount Maladetta, in the Pyrenees, enters the Atlantic at the Pointe de Grave. The estuary, the largest in France, is nearly 50 miles long. The total length of the river is about 346 miles. The valley is liable to destructive inundations, the most memorable being that of 1875, when damage to the amount of about $17,000,000 was caused.

Garonne, Haute, a department in the S. of France, embracing portions of ancient Gascony and Languedoc; area 2,429 square miles; pop. (1901) 439,769.

Garrick, David, an English actor; born in Hereford, England, Feb. 19, 1717. He was educated at the grammar school at Lichfield, and he gave an early proof of his dramatic tendency by inducing his schoolfellows to act the "Recruiting Officer," in which he himself took the part of Sergeant Kite, being then only 12 years of age. He was sent to Lisbon on the invitation of his uncle, a wine merchant, in order that he might learn the wine trade. His stay in Lisbon was short; and returning to Lichfield he was placed under Dr. Samuel Johnson. In 1737 Garrick and his tutor traveled to the metropolis; he was placed under the care of a mathematician with a view of cultivating his general powers previous to his admission as a student of law. The death of his father disturbed this arrangement; and in 1741 he gave way to his inclination by joining Giffard's company at Ipswich, where under the name of Lyddal he played a great variety of parts with uniform success.

At this time the stages of the metropolis were but indifferently supplied with leading performers, so that when Giffard introduced his accomplished recruit there, Oct. 19, 1741, the effect was immediate and decisive. He chose the part of "Richard III.," which was repeated for many successive nights. In May, 1742, he played three nights at Drury Lane; afterward visited Dublin, and on his return commenced an engagement at Drury Lane. In 1745 he became joint manager with Sheridan of a theater in Dublin. In 1746 he was engaged for the season at Covent Garden, and at its cl he purchased Drury Lane in conju tion with Mr. Lacy, and opened Sept. 15, 1747, with the "Merch of Venice," to which Dr. Johns wrote a prologue for the occasion. 1749 he married Eva Marie Viol (1724–1822), and his married seems to have been happy.

The year 1769 was signalized by famous Shakespearean jubilee. It oc pied three days at Stratford, and presentation at the theater lasted 92 nights. After the death of Lacy sole management of the theater volved on Garrick, who continued fulfill the duties of that office till 17 when he determined on his final treat. He died Jan. 20, 1779. remains were interred with great po in Westminster Abbey, his funeral ing attended by a numerous asse blage of rank and talent. His est at his death was valued at £140,(($700,000).

Garrigan, Philip J., an Americ clergyman; born in Ireland in 184 was graduated at St. Charles Colle Maryland, in 1866, and later at Joseph's Provincial Seminary, N York; ordained in the Roman Catho Church and had charge of churches Massachusetts till 1888, when he came assistant treasurer and vi rector of the Catholic University America. He was consecrated bish of the diocese of Sioux City, Ia., 1902.

Garrison, William Lloyd, American reformer; born in Newbu port, Mass., Dec. 12, 1805. He w apprenticed to a shoemaker, but came a compositor on the Newbu port "Herald." In 1827 he beca editor of the "National Philanthr ist," the first American tempera journal, and afterward of a journal support of the election of John Qui Adams. With Mr. Lundy, a Quak he then started the paper called "Genius of Universal Emancipatio (1829), his denunciations of sla traders leading to his imprisonment libel. On his release he commen lecturing in Boston, started the "L erator" (1831), published weekly w the aid of one assistant and a ne boy. In 1832 appeared his "Thoug on African Colonization," and in same year he established the Ame

n Anti-Slavery Society. He subse-
hently visited England. In 1835 he
as saved with difficulty from a Bos-
n mob; but his principles made
eady progress till 1865, when the
nti-Slavery Society was dissolved
ith its work accomplished. He died
New York city May 24, 1879.

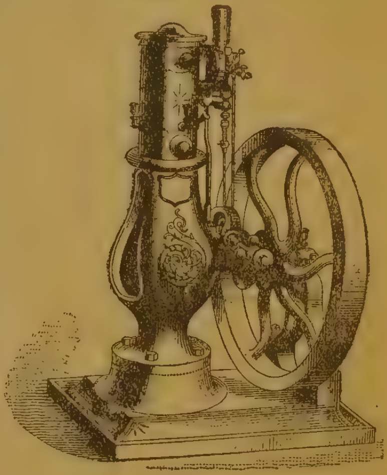
Garrote, or **Garrotte,** a Spanish
strument of execution. The victim,
sually in a sitting posture, is fastened
an iron collar to an upright post,
d a knob operated by a screw or
ver dislocates the spinal column, or
small blade severs the spinal cord
the base of the brain.

Garshin, Vsevolod Michailo-
ich, a Russian novelist; born in
achmut, Yekaterinoslav, Feb. 14,
55. He took part in the Russo-
urkish war, and was wounded at
harkow. He soon after finished his
eat work "Four Days," in which
e sufferings and hallucinations of a
ounded soldier are strikingly set
rth. He had intervals of sheer
ental blankness, and died in St.
etersburg, April 5, 1888.

Garter, Order of. The most
oble Order of the Garter, was in-
ituted at Windsor by Edward III.
out August, 1348. The order con-
sts of the sovereign and 25 com-
nions, of whom the Prince of Wales
always one. Knights are distin-
ished by the initials K. G. after
eir names, which take precedence of
other titles except those of royalty.
he insignia of the order is the garter,
aring the jewel, the star of eight
ints, inclosing the cross of St.
eorge, the collar, and the lesser
eorge or jewel. The ribbon, origi-
lly black, was changed to sky-blue
Elizabeth, and at the accession of
e house regnant, the present dark
ue ribbon was adopted.

Gary, Elbert H., an American
ancier; born in Wheaton, Ill., Oct.
1846; studied at Wheaton College;
d was graduated at the Law School
Chicago University in 1867, being
mitted to the bar of the Illinois Su-
eme Court the same year, and to
at of the United States Supreme
urt in 1878. He early applied him-
lf to the practice of corporation law,
d it was largely through his legal
ork that his talents as an organizer of large industries first came into recognition. These talents were given full scope in the formation of the American Steel and Wire Company. He retired from law practice in 1898 to become president of the Federal Steel Company, which in 1901 was merged into the United States Steel Corporation. He was also county judge of Du Page Co., Ill.

Gary, James Albert, an American statesman; born in Uncasville, Conn., Oct. 22, 1833; was educated at Allegheny College, Meadville, Pa. He was postmaster-general in 1897–1898, when he resigned.



GAS ENGINE.

Gas, in chemistry, a substance possessing the condition of perfect fluid elasticity, and presenting under a constant pressure a uniform rate of expansion for equal increments of temperature, but when reaching its maximum density behaving like a vapor. All gases can be condensed into liquids by cold and pressure.

Gascoigne, Caroline Leigh, an English novelist and poet; born (Smith) May 2, 1813. She died June 11, 1883.

Goscoigne, Sir William, an English astronomer; born about 1612. He is noted through his inventions, including the micrometer and various methods of grinding glasses; he was the first to employ two convex glasses in the telescope. He was killed in the battle of Marston Moor, July 2, 1644.

Gas Engine, an engine in which motion is given to the piston by the compression and expansion or explosion of a mixture of a combustible gas and air.

Gaskell, Elizabeth Cleghorn, an English author; born in Chelsea, London, England, Sept. 29, 1810. She married in 1832 the Rev. William Gaskell, a Unitarian clergyman then recently appointed minister of Cross Street Chapel, Manchester, and she died in Alton, Hampshire, Nov. 12, 1865.

Gas Light, in the most common meaning the light given by coal gas as employed in the lighting of buildings and streets. In 1792 W. Murdoch residing in Redruth in Cornwall made extensive experiments on the illuminating properties of gases obtained by distilling coal, wood, peat, and other combustible substances, which led him to the idea of collecting these gases in vessels, and expelling them through jets for light, and on this principle he lighted his own house and offices in Redruth. In 1798, having by this time returned to Birmingham, he erected a gas apparatus on a large scale at Soho Foundry. On the rejoicing for the peace of Amiens in 1802 the whole front of the Soho works was illuminated by Mr. Murdoch's gas apparatus. In the same year M. Le Bon lighted his house in Paris by gas obtained from wood and coal and made a proposal to supply the whole city. In 1805 a gas-lighting apparatus was erected in Manchester. The first gas company, the National Light and Heat Company, was established, and in 1809 Pall Mall was lighted.

From this time onward gas practically took its place as the universal illuminating agent wherever it could be made economically. Latterly, however, as a source of light, coal gas has been giving way to electricity.

Gasoline, a light grade of petroleum.

Gasometer, or **Gas Holder,** a inverted cylindrical vessel of shee iron, placed in a tank of cast-iro stone, or brick containing water. pipe ascends from the bottom of th tank through the water, to admit th gas to the space between the surfac of the water and the crown of the ga holder. Sometimes a second pipe descends through the water and the bottom of the tank, for the issue of th gas to the main pipe. Frequentl only one pipe is used for the inlet an outlet alternately. The water is fo the purpose of retaining the gas within the vessel. The pressure of th gas raises the gas holder; and th weight of the holder impels the ga through the pipes.

Gasparin, Agenor Etienne Comte de, a French author; bor in Orange, France, July 12, 181 Elected to the Chamber in 1846, h attracted attention by his advocacy o religious liberty, prison reform, abolition of slavery, and social purity. A the outbreak of the American Civ War he published two books maintaining the justice of the Federa cause. He died near Geneva, Switzerland, May 4, 1871.

Gasparin, Valerie Boissier Comtesse de, a French author; wif of A. E. de Gasparin; born in Geneva Switzerland, in 1813. Two of he works obtained the Montyon prize a the Academie Francaise: "Marriag from the Christian Point of View and "There are Poor in Paris an Elsewhere." She died near Geneva Switzerland, June 19, 1894.

Gaspe, a peninsula on the E. o Quebec province, comprising the counties of Gaspe and Bonaventure, an projecting into the Gulf of St. Lawrence, between the estuary of tha name on the N. and the Bay of Chaleurs on the S.; area nearly 8,00 square miles. Pop. 35,000. Gasp Basin, where Cartier landed in 153 is a port of entry in Gaspe Bay.

Gaspee, a British revenue schooner destroyed in Narragansett Bay b Abraham Whipple and other patriot on the night of June 9, 1772. A reward of $5,000 was offered for the arrest of the leader, but Whipple wa never betrayed, and afterward becam a commodore in the American navy.

Gassendi, or **Gassend Pierre,** a
rench philosopher and mathemati-
ian; born in Champercier, Provence,
rance, Jan. 22, 1592. While going
ack to the ancients in his philosophy,
assendi marched to the van of the
oderns in natural and physical
cience. Kepler and Galileo were
umbered among his friends. His
Astronomical Institute" (1647) is
clear and connected representation
f the state of the science in his own
ay; in his "Lives of Tycho Brahe,
opernicus, Regiomontanus, etc.,"
1654) he gives not only a masterly
ccount of the lives of these men, but
ikewise a complete history of as-
ronomy down to his own time. He
ied in Paris, Oct. 14, 1655.

Gasteropoda, in zoölogy, gastero-
ods. Its essential character is that
he under side of the body constitutes
single muscular foot, on which the
nimal creeps or glides. Some breathe
ir, such as snails, slugs, etc.; others
ater as whelks, periwinkles, etc.

Gaston de Foix, a Duke of Ne-
ours, a French soldier; born in 1489.
e was son of John de Foix, Count
'Estampes, and Mary of Orleans, sis-
er of Louis XII. whose favorite he
ecame. At the age of 23 he routed a
wiss army, rapidly crossed four
ivers, drove the Pope from Bologna,
nd won the celebrated battle of Ra-
enna, April 11, 1512, but was killed
hile attempting to cut off a body of
etreating Spaniards.

Gastornis (named after Gaston M.
lante, its discoverer, and Greek
rnis = a bird), a huge fossil bird
rom the Eocene.

Gastric Fever, sub-acute inflam-
ation of the stomach; also a term
common use to denote enteric fever.

Gastric Juice, a colorless liquid
ecreted by the stomach containing
bout 98.5 per cent. of water; when
vaporated to dryness and burnt, the
shes consist chiefly of sodium
hloride. The gastric juice also con-
ains a free acid, probably hydrochloric
cid, and a peculiar substance called
epsin to which the power of digesting
ood possessed by the gastric juice
ppears to be due.

Gastric System, the parts of the
ody by means of which digestion is
arried on.

Gastritis, inflammation of the stomach, either acute or chronic, usually most severe at the pyloric orifice, generally caused by corrosive or irritant poisons, but chiefly from the use of raw spirits, accompanied by nausea, sickness, etc., and in severe cases followed by congestion. It seldom occurs in persons of temperate habit.

Gaszynski, Konstantin, a Polish poet and novelist; born in Ieziorno, near Warsaw, March 30, 1809. He wrote in both Polish and French, and the literary studies to which he devoted himself in Provence are widely quoted as authorities on its language and people. He died in Aix, Provence, Oct. 8, 1866.

Gatacre, Sir William Forbes, an English military officer; born in 1843; joined the British army in 1862. When the war in South Africa broke out he was ordered there and given an important command. He was repulsed at Stormberg with heavy loss. In April, 1900, he was recalled to England, and in the following month the Order of Knight of the Grand Cross of the Indian Empire was conferred upon him.

Gataker, Thomas, an English clergyman; born in London, England, in 1574. He was educated at St. John's College, Cambridge, and was in succession preacher at Lincoln's Inn, rector of Rotherhithe, and member of the Assembly of Divines at Westminster. He opposed the imposition of the Covenant, and was one of the 47 London clergymen who condemned the trial of Charles I. He died in 1654.

Gate City, The, Keokuk, Ia., situated at the foot of the lower rapids on the Mississippi; also Atlanta, Ga., a great railroad center, so named by Jefferson Davis during the Civil War, it being, in his estimation, the most important inland position, from a military point of view, in the South.

Gate of Asia, Kazan, a fortified city of Russia; it is the entrepot of commerce between Siberia, Bokhara, and Russia.

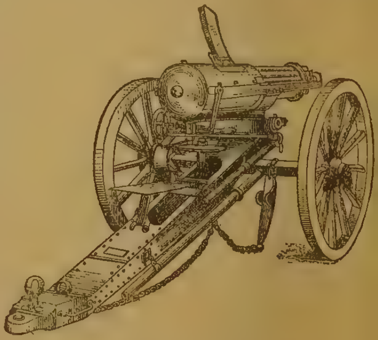
Gates, Horatio, an American military officer; born in Malden, England, in 1728; joined the British army early in life. In July, 1775, after offering his services to Congress, that body appointed him adjutant-general; in

1776 he was given command of a portion of the Northern army, and Aug. 2, 1777, assumed command of the Northern department. He met and captured Burgoyne with his whole army at Saratoga, Oct. 7, 1777, for which he received a gold medal and a vote of thanks from Congress. The credit of this victory, however, was largely due to Benedict Arnold. In November of the same year he was appointed president of the new board of war and ordnance; and in 1778, while holding that post, sought with the aid of his friends in Congress to supersede Washington as commander-in-chief. This action soon brought him into discredit, and after fighting a duel with Wilkinson, his former adjutant, he resigned from active service. In June, 1780, he again entered the army, becoming commander of the troops in North Carolina. On Aug. 16, of that year, his army was defeated near Camden, S. C. He was soon afterward suspended from duty, but reinstated in his command in 1782 after the capture of Cornwallis. Died in New York city, April 10, 1806.

Gates, Sir Thomas, a colonial governor of Virginia. He sailed from England in May, 1609, in charge of a colony of 500 emigrants to the New World. His vessel, the "Sea Venture," was stranded on the rocks of Bermuda. Here the passengers built two new ships and finally reached Virginia in May, 1610. Gates went to England in the meantime and returned in 1611 with 300 more emigrants. He was made governor the same year and held that office till 1614, when he returned to England, and there died in 1621, or soon after.

Gathmann Gun, a gun invented by Louis Gathmann, a Chicago mechanician and inventor, which is capable of throwing great masses of high explosives by means of gunpowder. Its bore is 13 inches, 1 inch larger than in any cannon heretofore made by the government. The shell is 7 feet long and contains 400 pounds of wet guncotton. There is a plunger at the end which, when it strikes an object, explodes the percussion cap which sets fire to some dry powder, that in turn sets off some dry guncotton, which on bursting lets loose the terrible force imprisoned in the 400 pounds of wet guncotton. One such projectile striking a battleship would blow it into fragments, and no fortification could for a moment withstand its assault. A satisfactory trial was made with this gun at Indian Head in the presence of navy and government officers, and in the early part of 1899 the Navy Department made an appropriation of $75,000 for the building of a gun after this model.

Gatling Gun, a machine gun, invented by Richard J. Gatling. The gun consists of a series of barrels in combination with a grooved carrier and lock cylinder. The operation of the gun is very simple. One man places a feed case filled with cartridges in the hopper; another man turns the crank, which, by the agency of the gearing, revolves the main shaft, carrying with it the lock cylinder, carrier, barrels, and locks. As the gun is rotated, the cartridges, one by one, drop into the grooves of the carrier from the feed cases, and instantly the lock, by its impingement on the spiral cam surfaces, moves forward to load the cartridge, and when the butt end of the lock gets on the highest projection of the cam, the charge is fired, through the agency of the cocking device, which at this point liberates the lock, spring, and hammer, and explodes the cartridge. As soon as the charge is fired, the lock, as the gun is revolved, is drawn back by the agency of the spiral surface in the cam acting on a lug of the lock, bringing



GATLING GUN.

vith it the shell of the cartridge after t has been fired, which is dropped on he ground. Thus, it will be seen, when he gun is rotated, the locks in rapid uccession move forward to load and ire, and return to extract the cartidge shells. In other words, the vhole operation of loading, closing he breech, discharging, and expelling he empty cartridge shells, is conducted vhile the barrels are kept in continuus revolving movement. It must be orne in mind that while the locks reolve with the barrels, they have also, n their line of travel, a spiral reciproating movement; that is, each lock evolves once and moves forward and ack at each revolution of the gun. The main features of the gun are: 1) Each barrel in the gun is provided vith its own independent lock or firng mechanism. (2) All the locks reolve simultaneously with the barrels, arrier and inner breech, when the un is in operation. The locks also ave, as stated, a reciprocating motion vhen the gun is rotated. The gun annot be fired when either the barrels r locks are at rest.

Gatling, Richard Jordan, an merican inventor; born in Hertford o., N. C., Sept. 12, 1818. While a oy he assisted his father in perecting a machine for sowing cotton eed, and another for thinning out coton plants. In 1861 he conceived the dea of the revolving battery gun vhich bears his name. Of these he onstructed six at Cincinnati, which vere destroyed by the burning of his actory. Afterward he had 12 manuactured elsewhere, which were used y General Butler on the James river. n 1865 he improved his invention, nd in the year following, after satisactory trial, it was adopted into the Jnited States service. It was used by he Canadian government in putting lown the halfbreed rebellion. It has lso been adopted by several European overnments. He died Feb. 27, 1903.

Gatschet, Albert Samuel, an merican linguist; born in Berne, witzerland, Oct. 3, 1832; was eduated at the Universities of Berne and erlin; removed to New York city in 868; made a special study of the lanuages of the American Indians. In 879 he became connected with the ureau of American Ethnology.

Gatshina, a town of Russia, 30 miles S. S. W. of St. Petersburg; is especially worthy of mention for its royal palace, surrounded by one of the finest pleasure gardens in Europe, which was the favorite summer seat of the Emperor Paul I., and the winter residence of Alexander III.

Gaucho, a native of the pampas of La Plata, and of Spanish descent. The Gauchos live by cattle-breeding, and are noted for their skill in horsemanship and the use of the lasso and the bolas.

Gauge, a standard of measurement. As applied to railways, gauge signifies the distance between the centers of each pair of rails, which in the ordinary or narrow gauge is 4 feet 8½ inches. Gauge is also the name applied to various contrivances for measuring any special dimension, such as the wire gauge.

Gaul, or Gallia, the country of the ancient Gauls. It extended at one time from the Pyrenees to the Rhine, and included also a part of Italy. Hence it was divided into Gaul on this side (the Roman side) of the Alps, or Gallia Cisalpina, and Gaul beyond the Alps, or Gallia Transalpina. Latterly the former was regarded quite as part of Italy, and the name Gallia was restricted to Transalpine Gaul, or the country nearly corresponding to modern France. Julius Cæsar, about the middle of the 1st century B. C., found Transalpine Gaul divided into three parts: (1) Aquitania, extending from the Pyrenees to the Garonne, chiefly occupied by Iberian tribes; (2) Gallia Celtica, Celtic Gaul, from the Garonne to the Seine and Marne; (3) Gallia Belgica, Belgic Gaul, in the N., extending to the Rhine.

Gaul, Alfred Robert, an English composer and organist; born in Norwich, England, in 1837. A number of his compositions including "The Ten Virgins" (1890), dedicated to the choirs of America, and secular part songs attained success.

Gauls, the chief branch of the great original stock of Celts. Migrations among the Gauls about 397 B. C., and their passage of the Alps, first bring the Gallic nation into the region of history. Having crossed the Alps they fell on the Etruscans, defeated the Romans at Allia (390 B. C.), and sacked and burned Rome, the capitol, however, being saved by Camillus. More than a century after the burning of Rome, the E. Gauls, in 280–287 B. C. made three destructive irruptions into Macedonia and Greece. Several tribes pursued their course into Asia Minor, where, under the name of Galatians, they long retained their national peculiarities. After these migrations the Gauls along the banks of the Danube and in the S. of Germany disappear. Tribes of German origin occupy the whole country as far as the Rhine, and even beyond that river. The Belgæ, who were partly German, occupied the N. part of Gaul, from the Seine and Marne to the British Channel and the Rhine, from whence colonists passed over into Britain, and settled on the coast districts. The Celts in Gaul had attained some degree of cultivation by intercourse with the Greeks and Carthaginians before they came in contact with the Romans. Those of Cisalpine Gaul continued formidable to Rome till after the first Punic war, when the nation was compelled as the result of a war of six years to submit to the Romans (220 B. C.). When Hannibal marched on Rome they attempted to shake off the yoke; but the Romans, victorious over the Carthaginians, reduced them again to submission. Thirty-one years later (189 B. C.) their kindred tribe in Asia, the Galatians, met with the same fate; they also were vanquished, and their princes (tetrarchs) became tributary. In the years 128–122 B. C. the Romans conquered the S. part of Gaul along the sea from the Alps to the Pyrenees, and here established their dominion in what was called the Province (Provincia), a name that still exists as Provence. Not long after Gaulish tribes shared in the destructive incursions of the Cimbri and Teutones on the Roman territory, which were ended by Marius in the battles of Aquæ Sextiæ (Aix) in 102, and Vercelli in 101 B. C. On the appointment of Julius Cæsar to the proconsulship over the countries bordering on Gaul, he resolved to subject all Gaul, and executed his purpose in less than nine years (58–50 B. C.), in eight bloody campaigns. The dominion of the Romans in Gaul was confirmed by colonies, and the liberal grant of the Roman citizenship to several Gallic tribes. The religion of the Druids, being suppressed in Gaul by Tiberius and Claudius, gradually retreated into Britain, soon also conquered by the Romans. After the extinction of the Cæsars, the Gauls once more attempted to recover their liberty by aid of the Germans, but after this last effort became entirely Romanized, even their ancient language, the Celtic, being supplanted by a corrupt Latin dialect. About the year 486 the Franks subdued the greater part of Gaul, and put an end to the dominion of the Romans in that country.

Gaur, the mediæval capital of Bengal, also called Lakhnauti; said to have been founded by the Vaidya King Lakshmanasena, at the close of the 11th century. The ruins of Gaur still cover a space of 7 miles by 2, on a branch of the Ganges.

Gaur, a very large, fierce, and untamable ox, found in the Ramghur jungles in India. The adult male is 6 feet high at the shoulder, 12 feet long to the end of the tail, and above 7 feet 6 inches in girth; the eyes are said to be blue; the forehead more arched than in the common ox, covered with whitish wool; hair on the other parts, smooth, shining brown; tail short, tufted.

Gauss, Karl Friedrich, a German mathematician and astronomer; born in Brunswick, Germany, April 30, 1777. In 1807 he received the appointment of ordinary professor and director of the observatory at Gottingen, which situation he held for nearly 48 years. During this long period he gave to the world a host of treatises on pure mathematics, geodesy, astronomy, and the cognate sciences, which all bear the impress of original genius, besides contributing largely to scientific journals and making observations on terrestrial magnetism which have proved of great utility to the cultivation of science. He died in Gottingen, Germany, Feb. 23, 1855.

Gautama, the chief deity of Burma.

Gautier, Theophile, a French poet and prose writer; born in Tarbes, France, Aug. 31, 1811. He applied himself at first, but without much sucss, to painting; and then turned to terature. Merimee alone contests ith him the palm as the prince of ort-story writers. He was drawn arly to feuilleton writing, and for ore than 30 years contributed to the aris newspapers criticisms on the eater and the salon. He died in aris, Oct. 23, 1872.

Gauze, a light transparent silk or otton stuff. In gauze weaving the eft-threads are separated from each ther, and a light, transparent texture roduced. Gauzes have been occasion- ly made of thread, but the name has ways signified a silk fabric.

Gavarnie, Cascade de, a water- ll in the Cirque de Gavarnie, Py- nees. It is the second highest in Eu- pe, being 1,385 feet in height.

Gavarnie, Cirque de, a natural nphitheater in the Pyrenees, 14 miles . S. E. of Cauterets. It is 2¼ miles width and 5,380 feet in height.

Gavazzi, Alessandro, an Italian former; born in Bologna, Italy, arch 21, 1809. At the age of 16 became a monk of the Barnabite rder. On the ascension of Pius IX. the papal chair, he repaired to ome, and devoted himself to the dif- usion of political enlightenment and atriotic aspirations among the masses the Roman population. The Pope nctioned his political labors, and ap- ointed him almoner of a body of out 16,000 Roman troops. He was lled Peter the Hermit of the national usade. On the establishment of the epublic at Rome he was appointed moner-in-chief to the national army. nder his superintendence efficient ilitary hospitals were organized and tended by a band of Roman ladies, ho volunteered their services and co- eration in the care of the wounded. ome having fallen, Gavazzi went to ngland, where he delivered numerous ldresses and lectures illustrative of e political and religious aims of his untry. He twice visited the United tates. He was president of the evan- elization committee of the Free Ital- n Church. He died in Rome, Jan. 1889.

Gavial, or **Gavialis,** the Gangetic ocodile called also the common vial. It has a large cartilaginous otuberance containing the nostrils at the end of the snout. The gavial is about 25 feet long; it feeds chiefly on fish, and does not as a rule attack man. It is not confined to the Ganges, but is found in some other large Indian rivers. The fossil is found also in the Eocene of the United States, though it is now confined to Asia.

Gavotte, or **Gavot,** originally a dance of the gavots, or people of Gap, in the department of the Upper Alps. A dance tune of a lively yet dignified character, of French origin, in common time.

Gawelghur, an elaborately fortified stronghold of Hindustan, in the N. part of the Nizam's dominions, on the crest of a high and rocky hill, 11 miles N. W. of Ellichpore. In 1803 it was taken by storm by the British under General Wellesley, afterward Duke of Wellington.

Gay, Delphine, a French poet and novelist; born in Aix-la-Chapelle, Rhine Province, Prussia, Jan. 26, 1804. Carefully educated by her mother, Sophie Gay, she won fame with her poetry at the age of 15, an academic prize at 18, and a royal pension at 20. After her marriage with the famous Emile de Girardin in 1831, she began to write romances, which proved very popular. She died in Paris, June 29, 1855.

Gay, John, an English poet; born near Barnstaple, Devonshire, England, in 1685. He died in London, Dec. 4, 1732.

Gay, Sidney Howard, an American journalist and author; born in Hingham, Mass., May 22, 1814. He was a descendant of Governor Bradford of Plymouth Colony; entered Harvard at the age of 15, and studied law in the office of his father, Ebenezer Gay. Unwilling to take the oath to support the Constitution of the United States, which fostered and protected slavery, he gave up a legal career and devoted himself to anti-slavery journalism and lecturing. He became, in 1842, editor of "The Antislavery Standard," a position he retained till he joined, in 1857, the editorial staff of the New York "Tribune," of which he was managing editor from 1862 to 1866. From 1867 to 1871 he occupied the same position on the Chicago "Tribune," and for another two years was managing editor of the "Evening Post." He died in New Brighton, Staten Island, June 25, 1888.

Gay, Walter, an American artist; born in Hingham, Mass., Jan. 22, 1856; was educated in Boston; studied art under Bonnat in Paris, where he was in frequent exhibitions. His paintings won many medals in America and Europe.

Gaya, the chief town of Gaya district, in Bengal, India, on the Phalgu, 57 miles S. of Patna. It is a place of the greatest sanctity, from its associations with the founder of Buddism and is annually visited by about 100,000 Hindu pilgrims, who, under the guidance of the Brahman priests, pray for the souls of their ancestors at the 45 sacred shrines within and without the walls. Pop. 80,383.

Gayal, or **Gyal,** an ox, with horns depressed at the base and directed outward. It is wild on the mountain ranges between Bengal and Further India. It is a dull, heavy animal, of gentle disposition, lowing like a buffalo rather than a common ox, but not wallowing in the mire like the former.

Gayarre, Charles Etienne Arthur, an American lawyer, politician, and historian; born in New Orleans, La., Jan. 9, 1805. He was admitted to the bar in 1829; was several times a member of the Louisiana Legislature; deputy State Attorney-General (1831); Secretary of State of Louisiana (1846-1853). His works deal largely with the history of his native State. He died Feb. 11, 1895.

Gay Head, a promontory and lighthouse on the S. W. extremity of Martha's Vineyard, Mass.

Gayler, Charles, an American dramatist; born in New York city, April 1, 1820. He wrote over 200 plays, and at one time had five produced simultaneously at New York theaters. He also wrote the first drama on the Civil War, entitled "Bull Run." He died in Brooklyn, May 28, 1892.

Gayley, Charles Mills, an American educator; born in Shanghai, China, Feb. 22, 1858; was graduated at the University of Michigan in 1878; became Professor of the English Language and Literature in the University of California in 1889.

Gay-Lussac, Nicolas Francois, a French physicist; born in St. Leonard, Haute-Vienne, France, Dec. 6, 1778. In 1804 he was the first to make balloon ascensions for purposes of scientific investigation. He enjoyed several official appointments, and was Professor of Chemistry at the Jardin du Roi. He died in Paris, May 9, 1850.

Gaza, one of the five chief cities of the ancient Philistines, situated in the S. W. of Palestine, about 3 miles from the sea, on the borders of the desert which separates Palestine from Egypt. It is often mentioned in the history of Samson, and was the scene of constant struggles between the Israelites and the Philistines. In 333 B. C. it was taken after a five months' siege by Alexander the Great, and from that time down to 1799, when the French under Kleber captured it, it witnessed the victories of the Maccabees, the Calif Abubekr, the Templars, and the heroic Saladin. Constantine the Great, who rebuilt the town, made it the seat of a bishop. The modern Guzzeh is a collection of mere villages. It has no gates, no fortifications or defenses of any kind. The only building of interest is the great mosque, with its tall octagonal minaret and peaked roof. Pop. 16,000.

Gazelle, a kind of antelope. It lives in North Africa, is gentle in character, but when a herd is attacked, it forms a circle presenting an array of horns, so as to leave no safe means to allow the assailant to break the ring of defense. Nevertheless, the gazelle is largely preyed on by the lion. It furnishes a constant theme for Arabic poetry.

Gean, the wild cherry. It occurs in Europe, in North Africa, and in Western Asia to the Himalaya Mountains. The fruit is excellent.

Geary, John White, an American military officer and politician; born in Mount Pleasant, Westmoreland co., Pa., Dec. 30, 1819. He was a lieutenant-colonel in the Mexican War; went to California and was appointed postmaster at San Francisco in 1849, being the first to hold that position in the city. In 1850 he was elected the first mayor of San Francisco, and in 1856 was made territorial governor of Kansas. When the Civil War broke out he enlisted in the Union army and became Brigadier-General of volunteers April 25, 1862. He was in the battle of Cedar Mountain, Aug. 9, 1862, and commanded a division at Chancellorsville, Gettysburg and Lookout Mountain. He also participated in Sherman's march to the sea. He was governor of Pennsylvania from 1867 till two weeks before his death in Harrisburg, Pa., Feb. 8, 1873.

Geber, an Arabian alchemist. He is often called the father of chemistry, and flourished in the 8th century. He died about 776.

Gebhardt, Oskar von, a German theologian; born in Wesenberg, Esthonia, June 22, 1844; studied theology at Dorpat, Tubingen, Erlangen, Gottingen and Leipsic, and after 1875 was engaged as a librarian at Strasburg, Leipsic, Halle, Gottingen (1880), and Berlin (1884).

Gebhart, Emile, a French critic and essayist; born in Nancy, France, July 19, 1839. His numerous writings have to do mostly with the poetry and art of antiquity.

Gecko, a name applied to each of the species of a group of lizards. There are nearly 300 species found in the warmer regions of the earth's surface. Almost all are nocturnal in their habits and are of rather small size. A peculiar acrid mucus is secreted by glands on the under surface of the toes which is said to possess a slight blistering property when applied to the skin, and to be otherwise poisonous. The ends of the toes are usually flattened into disk-like bodies, by means of which the animal is enabled to exhaust the air under the foot, and thus adhere forcibly to any flat surface on which it may be placed. In this manner it courses over perpendicular walls and walks in perfect safety inverted on a ceiling. During the day it lies hidden in damp and obscure places, sallying forth in the evening to prey upon insects which it pursues with great rapidity, uttering from time to time a short, sharp chirp.

Geddes, Alexander, a Scottish Biblical critic; born in Ruthven, Banffshire, Scotland, in September, 1737. He was educated for a priest first in Scalan, in the Highlands, next at the Scots College, Paris, where he acquired a knowledge of Hebrew, Greek, Italian, French, Spanish, German, and Dutch. Through the munificence of Lord Petre he published a translation of the Bible into English for the use of Roman Catholics (1792–1800), the last volume containing his "Critical Remarks on the Hebrew Scriptures." These volumes, especially the last, are startlingly heretical, offending Catholics and Protestants alike, and exposed Geddes to the charge of infidelity. He died in London, Feb. 26, 1802.

Geddes, Andrew, a Scottish painter and etcher; born in Edinburgh, Scotland, April 5, 1789. He ranks high as an etcher. In 1831 he was elected A. R. A. He died in London, May 5, 1844.

Geefs, Guillaume, a Belgian sculptor; born in Antwerp, Sept. 10, 1806. He became professor at the Academy of Antwerp in 1834. He produced many works of merit. His brothers Joseph (died 1885) and Aloys (died 1841) were also sculptors of reputation.

Geffroy, Mathieu Auguste, a French historian; born in Paris, France, April 21, 1820. He became Professor of Ancient History at Paris in 1872; and three years later was appointed director of the French school at Rome. He died in Paris, Aug. 15, 1895.

Gegenbaur, Karl, a German anatomist. In 1855 he was called to a medical professorship at Jena, but from 1858 to 1873 he taught principally anatomy. He removed to Heidelberg in 1873. His fame rests on his "Outline of Comparative Anatomy."

Gehenna (Hebrew Ge Hinnom, the Valley of Hinnom), in Scriptural geography a valley anciently belonging to a man, Hinnom, of whom nothing is known, and inherited by his son or sons, whence it is called the Valley of the Son of Hinnom, or of the children of Hinnom. In Joshua it is described as lying S. of Jebusi, the Jebusite capital, which afterward became Jerusalem. Here, during the later period of the Jewish kings, men made their sons and daughters pass through the fire to Molech or Moloch, the Ammonite fire-god, or actually burnt them in the fire. Josiah put an end to these cruel practices, and defiled the place. It was doomed afterward to become an overcrowded cemetery. When the Jews outgrew all love of human sacrifice, they regarded the place with horror, the rabbis deeming it the gate of hell. The valley, which the Arabs call Gehennam, is thoroughly known. It is narrow and deep, with rugged limestone cliffs excavated for tombs, and the mountain sides overtopping all.

Gehrt, Karl, a German artist; born in Hamburg, Germany, May 11, 1853; died in Enderich, Germany, July 17, 1898.

Geibel, Emanuel von, one of the most popular of modern German poets; born in Lubeck, Germany, Oct. 17, 1815. At the beginning of 1843 a pension of 300 thalers was bestowed on him by the King of Prussia. In 1852 he was appointed Professor of Æsthetics in the University of Munich by the King of Bavaria — a post he retained till 1868, when he retired to Lubeck. He died in Lubeck, April 6, 1884.

Geiger, Abraham, a German Orientalist; born in Frankfort-on-the-Main, Prussia, May 24, 1810. His prize essay, "What Does Mohammed Owe to Judaism?" was published in 1833. In November, 1832, he was called as rabbi to Wiesbaden, and there he devoted himself with great zeal and in a scientific spirit to Jewish theology, especially in its relation to practical life. In 1838 he was called as second rabbi to Breslau, and here he came into serious conflict with the more conservative Jews, but carried with him all men of learning and thought. He died in Berlin, Oct. 23, 1874.

Geiger, Lazarus, a German philologist; born in Frankfort-on-the-Main, Prussia, May 21, 1829. He wrote much on the relation of language and thought, affirming that without language man must have been without reason. He died in Frankfort-on-the-Main, Aug. 29, 1870.

Geijer, Erik Gustaf, a Swedish historian; born in the province of Wermland, Jan. 12, 1783. He sat in the national Parliament for some years, and was distinguished for his eloquence. His "History of the Swedish People," "History of the State of Sweden from 1718 to 1882," and various contributions to the history of philosophy, theology, and æsthetics, are epoch-making in Swedish letters. He died in Stockholm, April 23, 1847.

Geikie, Sir Archibald, a Scottish geologist; born in Edinburgh, Scotland, Dec. 28, 1835. From 1870 to 1881 he was Murchison Professor of Geology in Edinburgh University; and in 1881 was appointed director-general to the survey of the United Kingdom, being at the same time placed at the head of the Museum of Practical Geology, London.

Geikie, James, a Scottish geologist; born in Edinburgh, Scotland, Aug. 23, 1839. He received an education similar to that of his brother Archibald, and succeeded him as Murchison Professor of Geology in Edinburgh University.

Geiler von Kaiserberg, Johannes, a famous German pulpit orator; born in Schaffhausen, Switzerland, March 16, 1455. He was one of the most learned and original men of his age; his sermons, usually composed in Latin and delivered in German, are marked by great eloquence and earnestness, nor do they disdain the aids of wit, sarcasm, and ridicule. He died in Strasburg, March 10, 1510.

Geiregat, Pieter, a Flemish novelist and dramatist; born in Ghent, Feb. 25, 1828. He began as a journalist, but soon became known as a writer of sketches and stories and plays. He is happy in delineating the national character, and successful also as a historical novelist.

Geissler, Heinrich, a German mechanician; born in Igelshieb, Germany, May 26, 1814. He became known as a maker of physical and chemical apparatus and principally as the inventor of Geissler's tubes, an apparatus for producing light by an electric discharge in vacuo. He died in Bonn, Prussia, Jan. 24, 1879.

Geissler's Tubes, tubes made of very hard glass, and containing highly rarefied gases. Each end of the tube has a platinum wire sealed into it to serve as electrodes. When a discharge of electricity is caused to take place in these tubes by connecting the electrodes to the terminals of a Ruhmkorff's coil or a Holtz's machine, very brilliant effects may be produced.

Gela, one of the most important ancient Greek cities of Sicily, situated on the S. coast of the island between Agrigentum and Camarina; founded in 690 B. C. by a colony of Cretans and Rhodians. The colony was remarkably prosperous, and in 528 B. C. sent out a portion of its inhabitants, who founded Agrigentum. In 280 Phintias, the tyrant of Agrigentum, utterly destroyed Gela.

Gelada, a singular Abyssinian baboon, remarkable for the heavy mane which hangs over the shoulders, and which only grows when the animal is adult.

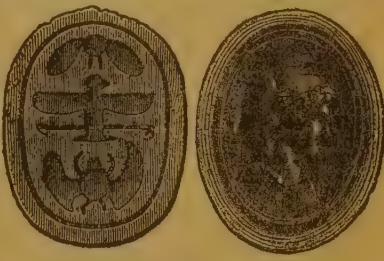
Gelatine, or **Gelatin,** so named from the tendency which the substance has to congeal and become to a certain extent solid. Animal glutin is obtained by treating bones with dilute hydrochloric acid, which dissolves the mineral constituents of the bone, and leaves the bone cartilage. This, when boiled for a long time with water, dissolves, and forms gelatine, which can be purified by dissolving in hot water and precipitating by alcohol. Impure gelatine, called glue, is prepared by boiling down pieces of hide, horn, hoof, cartilage, etc., with water under pressure. Pure gelatine is amorphous, transparent in thin plates, of a yellowish-white color; it has neither taste nor smell, and is neutral to vegetable colors. In contact with cold water it swells up, and is soluble in hot water. It is insoluble in alcohol and ether.

Gellert, Christian Furchtegott, a German poet; born in Saxony, July 4, 1715. After spending some years in teaching, in 1751, he received a professorship at Leipsic, where he lectured on poetry, eloquence, and morals, to large and enthusiastic audiences. Gellert came to occupy this position partly on account of his writings, but more on account of his personal character. He died in Leipsic, Dec. 13, 1769.

Gellius, Aulus, a Latin author; flourished in the 2d century of our era. His well-known work, "Attic Nights," is a collection of miscellaneous matter on language, antiquities, history, and literature, in 20 books, of which the 8th is wanting. It contains many extracts from Greek and Latin authors no longer extant.

Gelon, tyrant of Gela and afterward of Syracuse. He was a scion of a noble family of the former city, and succeeded its tyrant, Hippocrates, in 491 B. C. Six years later he made himself master of Syracuse also, which then became the seat of his government, and to which he transferred the majority of the inhabitants of Gela. He became embroiled with the Carthaginians because of their attack on his ally, Theron of Agrigentum, and defeated them in a great victory at Himera, on the same day, according to tradition, on which the Greeks won the battle of Salamis. The clemency and wisdom of Gelon rendered him so generally beloved that when he appeared unarmed in an assembly of the people, and declared himself ready to resign his power, he was unanimously hailed as the deliverer and sovereign of Syracuse. He died about 478 B. C.

Gem, a precious stone. Gems are sometimes found crystallized in regular shapes and with a natural polish, more commonly of irregular shapes and with a rough coat. The term gem often denotes more particularly a stone that is cut, polished, or engraved, and it also includes pearls and various artificial productions. The first and most valuable class of gems includes diamonds, emeralds, rubies, sapphires, and a few others; the second class includes the amethyst; topaz, garnet, etc.; while agate, lapis-lazuli, carnelian, etc., though much used for ornament, can scarcely be called gems. The fabrication of artificial gems is now prosecuted with skill and has become an important art.



Intaglio. Cameo.

GEMS.

Gemara, that portion of the two Talmuds which contains the annotations, discussions, and amplifications of the Mishnah.

Gemini, the third of the zodiacal constellations. The name is given from two conspicuous stars, Alpha and Beta Geminorum, the former named, after the example of the Greeks, Castor; the latter Pollux.

Gemmation, in botany: (1) The act of budding; specifically, the production of buds in the axils of the floral leaves, the former developing into new flowers or inflorescences. (2) The manner in which young leaves are folded up in a bud before it opens; vernation. (3) The time when buds come forth.

In zoölogy, generation by the development of buds, which in some species grows out of the forepart of the body, and in others from the hind part near the stem, or from the stem itself, from which the young animal soon detaches itself.

Gem Sculpture, the glyptic art, or lithoglyptics; the art of representing designs on precious stones, either in raised work (cameos) or by figures cut into or below the surface (intaglios).

Genast, Karl Albert Wilhelm, a German poet and dramatist; born in Leipsic, Saxony, July 30, 1822. He died in Weimar, Germany, Jan. 18, 1887.

Gendarme, one of the armed police of France. They are divided into horse and foot gendarmes. They are all picked men, and are usually selected from the military forces for their courage and good character. They are divided into brigades, and a number of brigades form a departmental company. The gens-d'armes were originally the king's horse-guards only, but afterward the king's gardes-du-corps (body-guard); the musketeers and light-horse were reckoned among them. There was also a company of gentlemen (in number about 250) bearing this name.

Genealogy, the systematical investigation and exhibition of the origin, descent, and relations of families (or their "pedigree"). Persons descended from a common father constitute a family. Under the idea of "degree" of relationship is denoted the nearness or remoteness of relationship in which one person stands with respect to another. A series of several persons descended from a common progenitor is called a "line." A line is either "direct" or "collateral." The collateral lines comprehend the several lines which unite in a common progenitor. For illustrating descent and relationship genealogical tables are constructed, the order of which depends on the end in view. The common form of genealogical tables places the common stock at the head, and shows the degree of each descendant by lines. Some tables, however, have been constructed in the form of a tree, in which the progenitor is placed beneath, as if for a root.

Genee, Rudolf, a German author; born in Berlin, Prussia, Dec. 12, 1824. As a reader and interpreter of Shakespeare he attained distinction; but his plays raised him to the front rank. His works in criticism, treating of German poetry, the drama, and kindred themes, are standard.

General, the title of a military office of varying importance in different countries. In the United States this office was created by Congress for General Grant and that of lieutenant-general for General Sherman. After the death of General Grant the office was conferred on General Sherman and General Sheridan was promoted to lieutenant-general, and on the death of General Sherman the office was revived for General Sheridan. With the latter the offices of lieutenant-general and general expired by law. That of lieutenant-general was revived in 1895 for Maj.-Gen. John M. Schofield, and again in 1901, when Maj.-Gen. Nelson A. Miles was appointed its incumbent. Lieutenant-General Miles retired in 1903. When the office of lieutenant-general has expired by law the senior major-general becomes the commanding officer of the army, under the direction of the President.

In 1903 the United States army had a lieutenant-general, annual salary while active, $11,000, since retired, $8,250; two major-generals active salary, $7,500, retired, $5,625; and six brigadier-generals, active salary, $5,500, retired, $4,125. A major-general, in time of war commands a division or army corps or several divisions, and a brigadier-general a brigade, and, in emergencies, a division.

General, in the Roman Catholic Church, the supreme head, under the Pope, of the aggregated communities throughout Christendom belonging to a religious order.

Genesis. In Scripture, the first book of the Pentateuch, of the Old Testament, and of the Bible. It is called in Hebrew bereshith, which is its initial word, correctly translated in the authorized English version, "In the beginning."

The Jewish and, following it, the early Christian Church almost unanimously pronounced Moses the author of the work, deriving his knowledge of the events prior to his time either from direct revelation or from prior documents consulted under divine guidance.

Genet, a mammal, gray, spotted with black and brown, with a long tail, which is ringed with black and white. There is white also on the eyebrows, the cheeks, and the sides of the nose. Its fur is soft and fine. It is found from the South of France to the Cape of Good Hope, living on the banks of rivers or near springs. In Constantinople it is domesticated like a cat.

Geneva, a town of Switzerland; capital of the canton of the same name; at the W. extremity of the Lake of Geneva, where the Rhone issues, here crossed by several bridges, and dividing the town into two portions, the larger and more important of which is on the left or S. bank. In literature and science Geneva has long occupied a distinguished place, and it has been the birthplace or the residence of many eminent men, including Calvin, Beza, Knox, Le Sage, Necker, De Candolle, Rousseau, Sismondi, etc. Geneva early adopted the principles of the Reformation, and chiefly through the teaching of Calvin the town acquired an important influence over the spiritual life of Europe, and became the center of education for the Protestant youth of Great Britain, France, and Germany. Pop. (1901) commune, 105,139, including suburbs.

The canton is bounded by the canton of Vaud and the Lake of Geneva, and by France; area, 108 square miles; pop. (1900) 132,609. The territory of Geneva having, through the Congress of Vienna, obtained an accession of 15 communes, detached from France and Savoy, was admitted a member of the Swiss Confederation in 1814, and ranks as the 22d canton. Its constitution of 1848 is the most democratic in the federation. All religious denominations are declared to have perfect freedom, but two of them are paid by the State — the Roman Catholics, amounting to rather more than a third of the population, and the Protestant National Church. Language French.

Geneva Award, the settlement of the Alabama claims by five arbitrators, appointed by the President of the United States, the Queen of Great Britain, the King of Italy, the President of the Swiss Confederation, and the Emperor of Brazil. These rulers in the above order, named as arbitrators Charles Francis Adams, Lord Chief-Justice Sir Alexander Cockburn, Count Federigo Sclopis, Mr. Jacques Staempfli, and Baron Itajuba. J. C. Bancroft Davis and Lord Tenterden, respectively, represented as agents the United States and Great Britain. The tribunal met at Geneva, Switzerland, Dec. 15, 1871, and Count Sclopis was made president. The United States claimed damages both for direct and for indirect losses, and for injuries occasioned by 13 vessels. The tribunal decided to allow only direct losses caused by the "Florida" and the "Alabama," with their tenders, and by the "Shenandoah" during part of her cruise. Various rules of international law were laid down which supported most of the contentions of our government. On Sept. 14, 1872, the tribunal "awarded to the United States a sum of $15,500,000 in gold as the indemnity to be paid by Great Britain to the United States as the satisfaction of all the claims referred to the consideration of the tribunal." The English representative cast the only dissenting vote, but Great Britain accepted the decision and paid the award within a year.

Geneva Bible, a translation of the Bible into English, made and published at Geneva, chiefly by English Protestant refugees. It was the first English Bible which adopted the Roman instead of the old style black type, and the first which recognized the division into verses; it was the first also which omitted the Apocrypha. From its stating, in Gen. iii: 7, that our first parents made themselves "breeches," it is sometimes known as the Breeches Bible.

Geneva College, a coeducational institution in Beaver Falls, Pa., founded in 1848 under the auspices of the Reformed Presbyterian Church.

Geneva Convention, a convention signed by the chief European continental powers in 1864, providing for the succor of the sick and wounded in war. It has since been ratified by the United States, Great Britain, Japan, and about 40 other nations. The chief provisions are:

1. The neutrality of ambulances and military hospitals.

2. The personnel of such ambulances and hospitals, including sanitary officers and naval and military chaplains, to be benefited by the neutrality.

3. The inhabitants of a country, rendering help to the sick and wounded, are to be respected and free from capture.

4. No distinction to be made between the sick and wounded, on account of nationality.

5. A flag and uniform to be adopted, and an armlet for the personnel of ambulances and hospitals. The flag and armlet to consist of a red Greek cross on a white ground. The Turks use a red crescent in place of the cross.

Other provisions have since been added intended to mitigate the severity of naval combat, and cover cases of capture and sinking of vessels. To carry out the terms of this convention, the International Society for the Aid of the Sick and Wounded has been organized, with committees in the chief towns in the United States and in Europe. It first played an important part in the Franco-German War, every nation sending its contingent of ambulances, surgeons, etc. In the Spanish American War the Cuban Central Relief Committee used the Red Cross Society as an agency in the distribution of relief, and Dr. A. M. Lesser, chief surgeon of the Red Cross, made a splendid record in aiding the wounded of both armies at Santiago.

Geneva, Lake of, or **Lake Leman,** (Latin, Lacus Lemanus), the largest of the Swiss lakes, extending in the form of a crescent, with its horns pointing S., between France on the S., and the cantons of Geneva, Vaud, and Valais; length, measured on the N. shore, 55 miles; and on the S. shore 40 miles; central breadth, about 6 miles; area, 331 square miles; greatest depth, 900 feet. It is 1,150 feet above the sea. The water is remarkably pure and of a beautiful blue color.

Genghis Khan, or **Jenghis Khan,** a Mongol conqueror; born near the Onon river, Mongolia, in 1162. His father was chief over 30 or 40 clans, but paid tribute to the Tartar Khan. He succeeded his father when only 14 years of age, and made himself master of the neighboring tribes. A great number of tribes now combined their forces against him. But he found a powerful protector in the great Khan of the Karaite Mongols, Oung, or Ung, who gave him his daughter in marriage. After much intestine warfare with various Tartar tribes Genghis was proclaimed Khan of the United Mongol and Tartar tribes.

He now professed to have a divine call to conquer the world, and the idea so animated the spirit of his soldiers that they were easily led on to new wars. The country of the Uigers, in the center of Tartary, was easily subdued, and Genghis Khan was now master of the greatest part of Tartary. In 1209 he passed the great wall of China, the conquest of which country occupied him more than six years; the capital, Yenking, now Peking, was taken by storm in 1215 and plundered. The murder of the ambassadors whom Genghis Khan had sent to the King of Kharism (now Khiva) occasioned the invasion of Turkestan in 1218 with an army of 700,000 men; and the two cities of Bokhara and Samarcand were stormed, pillaged, and burned. Seven years in succession was the conqueror busy in the work of destruction, pillage, and subjugation, and extended his ravages to the banks of the Dnieper. In 1225, though more than 60 years old, he marched in person at the head of his whole army against the King of Tangut (Southwestern China), who had given shelter to two of his enemies. A great battle was fought, in which the King of Tangut was totally defeated with the loss of 300,000 men. The victor remained some time in his newly-subdued provinces, from which he also sent two of his sons to complete the conquest of Northern China. At his death in Mongolia, in 1227, his immense dominions were divided among his four sons.

Genii, fabulous beings regarded by the Arabians as intermediate between angels and men, and capable of assuming any form or of becoming invisible at pleasure.

Genius, in Roman mythology, a tutelary deity. According to the belief of the Romans, which was common to almost all nations, every person had his own genius; that is, a spiritual being, which introduced him into life, accompanied him during the course of it, and again conducted him out of the world at the close of his career. The genii of women were called Junones.

Genlis, Stephanie Felicite Ducrest de St. Aubin, Comtesse de, a noted French writer; born in Champceri, Burgundy, Jan. 25, 1746. At the age of 16 she was married to the Comte de Genlis, and in 1770 was made lady-in-waiting to the Duchesse de Chartres. In 1782 the Duc de Chartres, afterward known as Egalite, appointed her "governor" of his children, including Louis-Philippe. She wrote a variety of works for her pupils. She died in Paris, Dec. 31, 1830.

Genoa (ancient Genua), a city of Italy, situated on the Gulf of Genoa, at the foot of the Apennines, the capital of the province and the most important seaport; 801 miles S. E. of Paris. While worthy of its title, "Genoa the Superb," as viewed from the sea, it is in reality built awkwardly on irregular rising ground, and consists of a labyrinth of narrow and intricate lanes, accessible only to foot-passengers or pack-mules. The dark thoroughfares are lined with tall buildings, some of them of marble and handsome architecture, but now in many cases hotels or business places.

Genoa is the commercial outlet of a wide extent of country, of which the chief exports are rice, wine, olive oil, silk goods, coral, paper, macaroni, and marble. The annual exports of Genoa are valued at nearly $20,000,000, the imports are returned at more than $75,000,000. The principal industries are iron works, cotton and cloth mills, macaroni works, tanneries, sugar refineries, and vesta-match, filigree, and paper factories. Pop. (1901) 234,800.

After the downfall of the empire of Charlemagne, Genoa erected itself into a republic, and till the 11th century shared the fortunes of the cities of Lombardy. The situation of the city was favorable to commerce, and it pursued the trade of the Levant even earlier than Venice.

At the beginning of the 12th century Genoa carried on an extensive commerce with the different nations of the Levant and had extensive foreign possessions. Little by little these were lost. When the neighboring countries submitted to the French in 1797 the neutrality which the republic had strictly observed did not save the fluctuating government from ruin. Bonaparte gave to them a new constitution formed on the principles of the French representative system. On the overthrow of the French empire Genoa was occupied by the British, with whose permission the ancient constitution was reëstablished. But the Congress of Vienna in 1815 assigned Genoa with its territories to Sardinia, stipulating that it should have a sort of representative constitution. In 1821 it joined for a moment the revolutionary movements of Italy. In the spring of 1849, after the defeat of Charles Albert at Novara and the conclusion of a truce with the Austrians, a revolutionary outbreak took place, the national guards occupied the forts, and the garrison was compelled to withdraw. A provisional government was formed and the independence of the republic was proclaimed. But a large body of Sardinian troops under Gen. Della Marmora, soon appeared before the city; a bloody struggle ensued and the forts and principal points of the city were taken by the royal soldiery. Meanwhile a deputation was sent to Turin, which returned with the amnesty of the king, excluding the chief leaders of the movement, who, however, escaped on board an American vessel. In April the city was disarmed and the monarchical government restored. Following the fortunes of the Sardinian States, Genoa became a portion of the kingdom of Italy.

Gentiles, in Scripture, all the nations of the world, excepting the Jews. In the Old Testament it is the rendering of the Hebrew word goim = peoples, nations. At first it was used as a mere ethnological word, and quite respectfully, but as the Jews became more conscious of their privileges they employed it more and more scornfully of the nations around.

Gentleman, in English law, every men above the rank of yeomen, including noblemen; in a more limited sense, a man who without a title bears a coat of arms, or one who is "a gentleman by reputation," though belonging to some liberal profession or holding some office giving him this rank. In the United States every man of honor and high principles, especially if also well-bred.

Gentleman Commoner, a privileged class of commoners in the English University of Oxford; they wear a special gown and a velvet cap.

Gentlemen-at-arms, a body of 40 gentlemen, headed by a captain, lieutenant, and standard-bearer, whose duties are to form a body-guard to the British sovereign on state occasions. The corps was established by Henry VIII. in 1509, under the name of the Band of Gentlemen Pensioners.

Gentz, Friedrich von, a German politician and writer; born in Breslau, Prussia, May 2, 1764. He died near Vienna, June 9, 1832.

Genung, John Franklin, an American educator; born in Willseyville, N. Y., Jan. 27, 1850; was graduated at Union College in 1870 and at the Rochester Theological Seminary in 1875; became Professor of Rhetoric in Amherst College.

Genus, a class, a kind, a species, in zoölogy and botany, an assemblage of species or of sub-genera closely agreeing together in all essential characteristics, not found in any others of the sub-family or family to which they belong.

Genzano, a town of Italy on the Via Appia, 16 miles S. E. of Rome, near the lake of Nemi. It contains the Cesarina palace, and is noted for its annual flower festival, held on the eighth day after Corpus Christi, which attracts many visitors.

Geoffrey of Monmouth, a famous English chronicler; born probably in Monmouth about 1100. He was the author of a famous chronicle or history of the first British kings, often quoted by men of letters, and remarkable for its curious legends. Geoffrey was successively archdeacon of Monmouth, bishop of St. Asaph, and abbot of Abingdon, where he died in 1152 or 1154.

Geoffroy St. Hilaire, Etienne, a French naturalist; born in Etampes, France, April 15, 1772. At the age of 21 he obtained the chair of zoölogy in the Parisian Jardin des Plantes. As a member of the Egyptian expedition in 1798 he founded the Institute of Cairo, and returned about the end of 1801 with a rich collection of zoölogical specimens. In 1807 he was made a member of the Institute, and in 1809 Professor of Zoology at the Faculty of Sciences. He devoted himself especially to the philosophy of natural history. He died in Paris, June 19, 1844.

Geoffroy St. Hilaire, Isidore, a French physiologist and naturalist, son of the preceding; born in Paris, Dec. 16, 1805. He devoted himself to natural history, and in 1824 was appointed assistant to his father at the Jardin des Plantes. He was elected to the Academy of Sciences in 1833, and afterward became successively inspector-general of the university, member of the council of instruction, and Professor of Zoölogy at the Academy of Sciences. He was the means of founding the Acclimatization Society of Paris. He died in Paris, Nov. 10, 1861.

Geography (from the Greek ge, earth, and grapho, I write), the description of the earth, of the condition of our globe. The earth may be considered as a world, in relation to the other worlds; or as a body of different parts, properties, and phenomena, which at the same time is inhabited by eings of different natures; or as the esidence of free moral agents among vhom its surface is divided and hrough whose influence it undergoes nany changes. Geography, therefore, s commonly divided into mathematical r astronomical, physical, and politi-al. The first two taken together are lso called general geography.

Mathematical or astronomical geog-aphy has for its object the determina-ion of the form and dimensions of the arth and its relations with the celes-ial bodies; it treats of the earth's mo-ion and the laws by which that mo-ion is governed. Physical geography lescribes the principal features of the arth's surface, as consisting of land nd water; the extent and configura-ion of the continents and islands; the levation and direction of the moun-ain chains; the conformation of the lains and valleys, their altitude above he sea level; the soil, climate, and nimal and vegetable productions of he different countries. Political ge-graphy embraces, in the first instance, he description of the political or ar-itrary divisions and limits of em-ires, kingdoms, and states; and in he second, that of the laws, modes of overnment, and social organization vhich prevail in different countries.

Geological Survey, United States, a bureau of the Interior De-artment created for the purpose of reparing a map of the United States, lassifying the public lands, examin-ng the geological structure, mineral esources, and the products of the ountry. To these duties have since een added those of investigating the xtent to which the arid lands of the West can be redeemed by irrigation, egregating the irrigable from the non-rrigable lands, and the selection of ites for reservoirs and canals for the urposes of irrigation. The maps made y the Geological Survey are all on a arge scale, and have a degree of ac-uracy and a minuteness in detail ncomparably greater than ordinary naps.

There are three principal branches f the geological survey: (1) Geology roper; (2) Topography; (3) Irri-ation surveys. The geological branch nvestigates the stratigraphy, the geo-ogical structure and history, the lith-logy, mineralogy, and palæontology, the ores and mines, and in general the natural economics, resources, and physical geography of the country. The topographic branch prepares the maps; the irrigation branch investigates the possibilities of irrigation and selects the irrigable lands and sites available for reservoirs and canals. The work of the topographic branch is the basis of the work of the other two, and all the results of the latter are projected on the maps.

Geology, the science which investigates the bygone history of the earth with the view of accounting for its present condition. It inquires into the successive changes which have taken place in the organic and inorganic kingdoms of nature, seeks out the causes of these changes, and traces the influence which they have exerted in modifying the surface and the external appearance of the earth.

FOSSIL PLANT FROM COAL MEASURES OF PENNSYLVANIA.

Geometry (Greek ge, earth, and metron, measure), as its name implies, is primarily the mathematical science which has for its object the measurement of portions of the earth's surface. According to the Greek historians geometry originated in Egypt from the necessity of measuring off portions of the land, or of readjusting the boundaries of landed property after the inundations of the Nile. Since that epoch its scope has been widely extended.

Geometry according to the present meaning of the word may be defined as the science whose object is the consideration of the relations of magnitude and of position or form of any conceivable portion of space. Thus the principal object of geometry is the study of the relations which must exist between the parts of the same definite figure, that is, constructed, or supposed constructed, according to a given law, and the comparison together of figures so constructed.

George, Henry, an American political economist; born in Philadelphia, Pa., Sept. 2, 1839; received a common school education; went to California in 1859; worked as a newspaper compositor for a number of years; became an editor in 1867, and later was connected with several California periodicals; removed to New York city in 1880. He was nominated by the Labor Party for mayor of New York in 1886; received 67,000 votes; but was defeated. In 1897 he was again nominated for mayor by several organizations united under the name of the "Democracy of Thomas Jefferson." Though urged to use caution against overwork, he began the campaign with great enthusiasm. During the night of Oct. 28, he made four addresses and retired about midnight, but soon had a stroke of apoplexy and died before morning. His publications include "Progress and Poverty"; "The Land Question"; "Social Problems"; etc.

George I., King of England; born in Hanover, March 28, 1660. He was a son of Ernest I., first Elector of Hanover, and of the Princess Sophia, granddaughter of James I., King of England, and succeeded his father in the electorate, in 1698. On the death of Queen Anne, in 1714, he was called to the throne of England, as the nearest heir in the Protestant line, and this was the beginning of the English dynasty of Brunswick. Unfortunate in his family relations, George was obliged to divorce his wife Sophia of Zell, charged with an intrigue, and imprison her in the castle of Ahlen, where she ended her days in 1726, after a confinement of 32 years. He died in Osnabruck, June 11, 1727.

George II., King of England, son of the preceding; born in Hanover, Nov. 10, 1683. He succeeded his father in 1727. He retained as his prime minister the celebrated Sir Robert Walpole, who preserved the country from war during the first 12 years of his reign. After the dismissal of Sir Robert, he undertook some expeditions which resulted disastrously. In the war of the Austrian Succession he declared himself on the side of the Empress Maria Theresa, and against France. His armies, successful at Dettingen (1743), failed signally at Fontenoy (1745), and at Laffeld (1747), but the campaign was closed by the treaty of Aix-la-Chapelle (1748). Meantime, however, his throne had been strengthened by the victory of Culloden, gained over Prince Charles Edward Stuart and his adherents in 1746. War having in 1755 again broken out on the continent of Europe, England experienced fresh reverses in Germany and lost her Hanoverian dominions, but these losses were more than compensated by brilliant and valuable conquests in the East Indies, and in America. George was the founder of the British Museum. He died in London, Oct. 25, 1760.

George III., King of England, son of Frederick Louis, Prince of Wales; born in London, June 4, 1738. He succeeded his grandfather George II., in 1760. In the early part of his reign he gained brilliant successes over France and Austria in the Seven Years' War, and in 1763 concluded an advantageous peace. In 1764 George Grenville succeeded to Lord Bute as premier, and began those measures in relation to the American colonies the consequences of which proved so momentous; and the American Stamp Act was passed the following year. After a long and fruitless war, the independence of the United States was acknowledged. The death of his youngest and darling child, the Princess Amelia, which happened toward the close of 1810, gave the king a shock from which he never recovered. The insanity which already more than once had visited him returned and assumed a violent character. The remaining years of the king's life are little more than a blank, and he died in Windsor, Jan. 29, 1820.

George IV., King of England; born in London, Aug. 12, 1762. He succeeded his father George III. in 1820. During his regency occurred the final overthrow of Napoleon. He caused the passage of numerous laws against the liberty of the press, and had incessant troubles in Ireland to put down. In 1829, the bill granting Catholic emancipation was passed. George IV. married, in 1795, the Princess Caroline of Brunswick, whom he afterward caused to be tried before the law courts on a charge of adultery, in regard to which the most generally received opinion is that it was baseless. He left behind him a most disreputable character for morality, and his treatment of his wife probably intensified the popular dislike which his habits had first engendered. He died in Windsor, June 26, 1830.

George I., King of the Hellenes; born in Copenhagen, Dec. 24, 1845. He was second son of the King of Denmark. In 1863 he was elected king by the Greek National Assembly. In 1867 he married the Princess Olga, a niece of the Russian czar. His children were bred in the Greek faith.

George, Duke of Clarence, and brother of Edward IV., King of England. He espoused the cause of Henry VI. and his queen, Margaret of Anjou, against his brother and sovereign. He married a daughter of the Earl of Warwick (the "king-maker"), and joined him in his revolt against the royal authority. Being taken prisoner, he was condemned to death. The unfortunate prince, being allowed to choose the mode of his death, is said to have drowned himself in a butt of Malmsey wine in 1478.

George, Lake, called also **Horicon,** a beautiful lake, 32 miles long, near the E. border of New York State. It forms the head-waters of Lake Champlain, is studded with hundreds of picturesque islands, and its shores contain several favorite summer resorts. Here was fought the battle of Lake George, in which the French and Algonquins under Baron Dieskau were utterly defeated by the English and Iroquois under Sir William Johnson, Sept. 8, 1755.

George, Order of St., the name of numerous orders which have been founded in honor of St. George.

George, Prince, 2nd son of George I., King of the Hellenes, born in Corfu, Ionian Islands, June 24, 1869; was appointed lieutenant in the Greek navy, July 19, 1889. While traveling in Japan, in 1891, with his cousin, the Grand Duke (afterward Nicholas II.) of Russia, he rescued the latter from death at the hands of a religious fanatic. He was appointed High Commissioner in Crete in December, 1898.

George, St., the especial patron of chivalry, and tutelary saint of England. The story is that he was born of noble Christian parents in Cappadocia, became a distinguished soldier, and after testifying to his faith before Diocletian, was tortured and put to death at Nicomedia, April 23, 303.

George, St., one of the Bermudas. It is about 3 miles long and ½ mile broad, is fortified, and contains a port of the same name, which is a British military station.

George's Channel, St., the arm of the sea which separates Ireland from Wales S. of the Irish Seas. From Holyhead and Dublin on the N. to St. David's Head and Carnsore Point it extends about 100 miles, with a breadth varying from 50 to 70 miles. Its depth in the middle varies from 40 to 70 fathoms. The bottom is chiefly sand and gravel.

Georgetown, capital of British Guiana; on the Demerara river, not far from its mouth. It is handsomely built. Pop. 53,176.

Georgetown College, a coeducational institution in Georgetown, Ky., founded in 1829 under the auspices of the Baptist Church.

Georgetown University, an educational institution in Washington, D. C., founded in 1789 under the auspices of the Roman Catholic Church.

Georgia, a State in the South Atlantic division of the North American Union; bounded by North and South Carolina, Tennessee, Alabama, Florida, and the Atlantic Ocean; area, 59,475 square miles; one of the original 13 States; number of counties, 137. Pop. (1890) 1,837,353; (1900) 2,216,331.

The surface of the State is irregular, rising in terraces. The coast for about 20 miles inland is low and swampy; from here it rises about 100 feet in 20 miles till, in Baldwin county, about 200 miles from the sea, an elevation of 600 feet is reached. The foot hills and mountains begin here and extend toward the W. and N. W. reaching an altitude of 2,500 to 4,000 feet.

The State is rich in mineral resources, especially in the mountain regions N. of the Chattahoochee, and ranks second in the United States in the production of manganese; silver, emery, bituminous coal, antimony, granite, graphite, marble, magnetic and specular iron ore, zinc, limonite, tellurium, galena, mica, roofing slate, pyrites, and potter's clay abound. Gold is found in seams of quartz, in veins, and in the disintegrated sands and gravel. It was discovered in 1828 in White county, and led to the forcible removal of the Cherokee Indians. Petroleum is also found, as are amethysts, beryl, diamonds, and other precious stones.

In the N. part of the State the principal crops are wheat, corn, potatoes, apples, peaches, and other temperate fruits, grains, and vegetables, while Middle and Southern Georgia are devoted chiefly to upland cotton and sugar-cane. The State ranks second among the United States in the cotton production. Oranges, lemons, pineapples, bananas, pecans, English walnuts, and olives are grown to perfection in the S., and the watermelons of Georgia are considered the best in the world.

The manufacturing is principally carried on in Atlanta, Augusta, Savannah, Macon, and Columbus. The chief articles of manufacture are cotton goods, lumber mill products, flour and grist, cotton-seed oil, foundry and machine shop products, fertilizers, naval stores, railroad cars, brick and tile, wagons, and carriages, clothing, furniture, hosiery, and leather goods.

Georgia has a large and growing commerce, foreign and domestic. The financial condition of State and people is flourishing and the education of all, without regard to color, is liberally supported.

The governor is elected for a term of two years and receives a salary of $3,000 per annum. Legislative sessions are held annually beginning on Oct. 1, and are limited to 50 days each. The Legislature has 44 members in the Senate and 175 in the House. There are 11 Representatives in Congress.

Georgia was settled by a colony of 120 persons in 1733, under a patent granted to Oglethorpe, Whitefield, and the Wesleys, June 9, 1732. It was established as a barrier between the Spanish and Indians on the S. and the Carolinas on the N., and to provide a refuge for debtors, orphans, and other needy and destitute persons. In the war between England and Spain in 1739–1743, Oglethorpe made an alliance with the Creek Indians and led the combined troops of Carolina and Georgia in an invasion of Florida, and in 1742 he drove off the Spanish fleet that had attacked the forts on the Altamaha. After the peace, the Georgians demanded slaves, which had previously been prohibited. In 1752 the trustees surrendered the colony to the crown and negro slavery was introduced. At the outbreak of the Revolutionary War Georgia, having few claims for redress and no charter on which to base them, hesitated to join the other colonies, and was not represented in the Continental Congress in 1774. In March, 1775, St. John's parish sent a delegate to the Continental Congress, and in July all the parishes sent representatives. On July 10, 1775, a schooner commissioned by Congress captured a British ship laden with powder off Savannah. In 1778 Georgia ratified the Articles of Confederation, and in the same year the British captured Savannah, and held it till the close of the war, despite attempts by the Americans and French to retake it. In 1779 Augusta was taken by the British.

The first State constitution was framed in February, 1777, and on Jan.

2, 1788, Georgia unanimously ratified the Constitution of the United States. The second State constitution was adopted in 1789, and a third, by which the importation of slaves was prohibited, in 1798. There was some difficulty with the Creeks and Cherokees in 1783–1790, but treaties of peace were concluded with them in 1790 and 1791. In 1802 the Creeks ceded what is now Southwestern Georgia to the United States, which in turn ceded it to the State, receiving in exchange all the State's claims W. of the Chattahoochee, or what is now Alabama and Mississippi. The first steamship that ever crossed the Atlantic Ocean left Savannah in 1819.

In November, 1860, a State convention was called to consider the subject of secession. On Jan. 21, 1861, an ordinance of secession was unanimously passed, and Georgia ratified the Constitution of the Confederate States and adopted a new State constitution. In January, 1861, Forts Pulaski and Jackson, below Savannah, were seized by State troops, and from the battle of Chickamauga, in September, 1863, to the winter of 1864–1865 the State was constantly the scene of conflict. Atlanta was captured by General Sherman, Sept. 2, 1864, and he began his famous march thence to the sea, Nov. 15, occupying Savannah Dec. 21. Columbus, West Point, and Macon were taken in April, 1865, by General Wilson and on May 10, 1865, Jefferson Davis was captured at Irwinsville. One of the most noted Confederate prisons was located at Andersonville in this State. Here many thousands of Northern soldiers perished.

Georgia repealed the act of secession Oct. 30, 1865; adopted a new constitution; and ratified the Thirteenth Amendment to the Constitution of the United States. Congress, dissatisfied with the new constitution, put the State under military rule till another constitution was ratified in 1868; and the State was restored to the Union on its ratification of the Fourteenth Amendment in 1869. On the refusal to ratify the Fifteenth Amendment the State was again placed under military rule, but reinstated on its compliance with this demand. The recent prosperity and development of Georgia's resources has been due in large measure to the Cotton Exposition, in 1881, the Piedmont Exposition, in 1887, and the Cotton States and International Exposition, in 1895, all at Atlanta.

Georgia (by the Russians called Grusia, by the natives Karthli), formerly a kingdom, but now included in the Russian government of Tiflis, though the name is sometimes loosely employed to designate a much larger portion of the territory possessed by Russia S. of the Caucasus. Area, in the latter sense, about 34,000 square miles; of Georgia proper, about 15,000 square miles. The natives are a fine-looking race, the Georgian women, like the Circassians, being celebrated for their beauty. The history of the Georgians first becomes trustworthy about the time of Alexander the Great, to whom they became subject. About 324 B. C. they gained their independence under Pharnavas. They became Christianized toward the end of the 4th century. After yielding for a time to the supremacy of the Arabian caliphs Georgia regained its independence toward the end of the 10th century, which it retained till 1799, when Heraclius, successor of George XI., formally ceded his dominions to the Russian emperor Paul.

Georgia Bark, a small tree of the Southern United States closely resembling the cinchona or Peruvian bark. The wood is soft and unfit for use in the arts. The inner bark is extremely bitter, and is employed in medicine.

Georgia, Gulf of, a large gulf of the North Pacific Ocean, between the continent of North America and Vancouver's Island; about 120 miles in length from N. to S.; the breadth varies greatly in its different parts, from 6 miles to 20. It communicates with the ocean on the N. by Queen Charlotte's Sound and on the S. by the Strait of Juan de Fuca.

Georgia, South, an island in the South Atlantic. It is 90 miles long, and has high and rocky coasts, inaccessible from ice during a great part of the year. It abounds with seals and sea-fowl.

Georgia, University of, a coeducational non-sectarian institution in Athens, Ga.; founded in 1784.

Georgian Bay, formerly Lake Manitoulin, the N. E. part of Lake Huron, partly separated from the main body of the lake by the peninsula of Cabot's Head and the island of Great Manitoulin. It is about 120 miles long and 50 broad.

Geosaurus, the remains of a reptile which, if entire, would probably have been 9 or 10 feet long. They were found by Sœmmering in white lias, at Monheim in Franconia, and are now in the British Museum.

Gepidæ, a people of Germanic origin, first read of as settled about the mouth of the Vistula in the 3d century. Before the 5th century they had migrated to the Lower Danube, where they were subjugated by the Huns; but, revolting against Attila's son, they recovered their freedom and established themselves in Dacia. There their power grew so great that they levied tribute from the Byzantine emperors down to Justinian's days. In the end of the 5th century a powerful enemy arose against them in the Ostrogoths; and after them came the Longobards, who, in alliance with the Avars, inflicted a crushing defeat on the Gepidæ in 566. A part of the last named then submitted to the Avars, while a part accompanied the Longobards to Italy. Henceforward nothing more was heard of them.

Gerah, the smallest piece of Hebrew money, being the 20th part of a shekel. This would be about three cents.

Geranium, in ordinary language, a term most frequently applied to any of the cultivated pelargoniums.

Gerar, an ancient town or place of the Philistines in the times of Abraham and Isaac, in the S. of Judah, not far from Gaza.

Gerard, Baron Francois Pascal, a French portrait and historical painter; born of French parentage in Rome, March 11, 1770. The grandest of his works are his historical pictures, the "Battle of Austerlitz" (1810) and the "Entry of Henry IV. into Paris" (1814). Gerard was appointed first court painter and raised to the rank of baron by Louis XVIII. He died in Paris, Jan. 11, 1837.

Gerard, Comte Etienne Maurice, a French marshal; born in Damvillers, Meuse, France, April 4, 1773. He died in Paris, April 17, 1852.

Gerard de Nerval, pseudonym of Gerard Labrunie, a French poet, dramatist, and novelist; born in Paris, France, May 21, 1808. He was one of the most imaginative and graceful writers of his country, but the splendid career and fortune within his reach were ruined by improvidence and recklessness. He committed suicide in Paris, Jan. 25, 1855.

Gerfalcon, or **Jer-Falcon,** a species of falcon considered as the boldest and most beautiful of the tribe. In size it approaches closely to that of the osprey. Its general color is brownish-gray, of varied tints above and white beneath, and brown longitudinal spots. Of all the rapacious birds, except the eagle, it is considered the most formidable, the most active, and the most intrepid; it attacks the largest birds boldly and when transferred from the coldest climate to the warmest its strength is not diminished, nor is its vivacity checked in any degree.

Gerhard, Eduard, a German archæologist; born in 1795. In 1837, he became archæologist at the Royal Museum at Berlin, and afterward professor at the University. He died in 1867.

Gerhardt, Karl, an American sculptor; born in Boston, Mass., Jan. 7, 1853; studied in Paris. His works include busts of Gen. U. S. Grant, Henry Ward Beecher, Samuel L. Clemens, etc.

Gerhardt, Karl Friedrich, a French chemist; born in Strasburg, Aug. 21, 1816. In 1855 he became Professor of Chemistry at Strasburg. He died in Strasburg, Aug. 19, 1856.

Gerhardt, Paul, a German hymnwriter; born in Grafenhainichen, Saxony, March 12, 1607. The last 7 years of his life he was pastor of Lubben, Prussia, where he died, June 6, 1676. He wrote 123 hymns, all excellent, and many of them worthy to be placed among the choicest productions of Protestant sacred poetry.

Gerizim and **Ebal,** the two highest mountains in the central Palestine chain (3,000 feet), separated from each other by a deep narrow valley, in which stands the town of Nablus. The valley between them is very fertile.

Jacob's well stands where the vale joins the plain of Moreh. Mount Gerizim, along with Mount Ebal, was the scene of a grand and impressive ceremony, in which the whole people of Israel took part after crossing the Jordan. The half of the tribes standing on Gerizim responded to and affirmed the blessings, those on Ebal the curses as pronounced by the Levites. The Samaritans built a temple on Mount Gerizim as a rival to that of Jerusalem. And, though the Samaritan temple was destroyed by Hyrcanus about 200 years after, the mountain on which it stood continued to be held sacred by the Samaritans.

Germain-en-Laye, St., a town in the department of Seine-et-Oise, France, on a hill adjoining the Seine, 6 miles N. of Versailles, and 9 W. by N. of Paris. It is chiefly noted for its noble palace, originally built by Charles V. in 1370; reconstructed by Francis I.; and embellished by many succeeding sovereigns, especially Louis XIV. It is now used as barracks and a military prison. Pop. commune, 14,262.

German, pertaining or relating to Germany; or a native or inhabitant of Germany. Also the language of the higher and S. parts of Germany; the literary language of the whole country.

German Catholics, a religious sect which sprang up in Germany about the close of 1844, which rapidly increased during the four or five following years and then as rapidly declined. The immediate cause of the formation of this sect was the exhibition by Arnoldi, Bishop of Treves, of the holy coat preserved in the cathedral of that city and said to be the coat of Christ. The bishop accompanied the exhibition of the holy coat by a promise of plenary indulgence to whoever should make a pilgrimage to Treves to worship it. The announcement of this proceeding on the part of the Bishop of Treves produced a feeling of general astonishment in Germany and drew from a Silesian priest called J. Ronge, who had already been suspended from his charge on account of his independent views, a letter protesting against the exhibition of the holy coat and denouncing the projected pilgrimage as idolatry. This letter was published in the "Sachsische Vaterlandsblatter" on Oct. 16, 1844, and produced an amount of excitement that was quite unanticipated by the writer. Ronge was excommunicated, but this only increased the general enthusiasm in his favor and when he entered into relations with Czerski, another independent priest who had seceded from the Church, and made along with him an appeal to the lower grades of the clergy to unite in founding a National German Church independent of the Pope and governed by councils and synods, the appeal received a ready answer from a considerable number of those to whom it was addressed. A number of congregations belonging to the new body were formed in the more important towns, under the teacher Kote. In the spring of 1845 there were already about 100. At this time (March, 1845), a council was summoned to meet in Leipsic to deliberate on the affairs of the body. Only 20 congregations were represented there, but these proceeded to arrange a system of doctrine and practice. The Bible was recognized as the sole standard of faith, and its interpretation was left to reason, "penetrated and animated" by the Christian idea. Only two sacraments were admitted, baptism and the Lord's Supper. In matters of ritual each congregation was left free to carry into practice its own views. On the subject of purgatory nothing was declared either for or against it. The constitution of the new Church was thus a Protestant one, but in some respects the German Catholics went even further than the majority of Protestants in a liberal direction, inasmuch as they claimed for all, complete religious liberty and declared their religion to be capable of development and modification with the progress of the human mind.

The Church established on this basis had at first, great success. The most eminent men of the liberal party and the deepest thinkers of the time regarded the movement with sympathy. But it was not long before the spirit of opposition began to show itself. The majority of the governments in Germany at the instigation both of the Protestant and the Roman Catholic clergy began to use repressive measures against the new body. At Baden the adherents of the sect were deprived of their political rights. Austria took the course of banishing them from her dominions. But persecution from without did less hurt than the divisions within the body. Czerski and Ronge, the two originators of the sect, became the leaders of two opposing parties within it, one of which, that headed by Czerski, clung to the traditions and doctrines of the Roman Catholic Church, rejecting only the supremacy of the Pope and the union between Church and State; while the other sought for more freedom, converted religion into a sort of popular philosophy and began to mix up with it questions of politics.

From the year 1850, however, there were several attempts to reëstablish the unity of the body. A council held at Gotha in June, 1859, proposed the formation of a religious association or confederation into which all free Protestant and even Jewish congregations were to be admitted. But the association consisted of too heterogeneous elements, and the plan failed. According to the most recent statistics there are still about 100 congregations of German Catholics in Germany; but their numbers only amounted to about 6,200.

German Evangelical Protestant Church, in the United States, a religious body, liberal in doctrinal belief, having no confession of faith. Its ministers are associated in district unions.

German Evangelical Synod of North America, a religious body, accepting the symbolical books of the Lutheran and Reformed Churches, representing in the United States the State Church of Prussia, which is a union of the Lutheran and Reformed bodies. It celebrated, Oct. 12, 1890, the semi-centennial anniversary of its organization in the United States.

Germania, an extensive country of ancient Europe, situated E. of Gaul, from which it was separated by the Rhine. Its inhabitants were warlike and uncivilized, and always proved a watchful enemy against the Romans. Cæsar first entered their country; but he rather checked their aggressions than conquered them; and they continued for some time to be more or less troublesome to his successors.

Germanicus Cæsar, a Roman general, the son of Nero Claudius Drusus, and of Antonia, daughter of Mark Antony and niece of Augustus; born in 15 B. C. By desire of Augustus he was adopted in the year 4 A. D. by Tiberius. In 14 news came of the death of the Emperor Augustus and of the mutiny for more pay and shorter service among the soldiers in Germany and Illyricum. Germanicus hastened to the camp and quelled the tumult by his personal popularity; and at once led his soldiers against the enemy. Crossing the Rhine below Wesel, he attacked and routed the Marsi, and next year marched to meet the redoubtable Arminius whom he completely overthrew in two desperate battles. Tiberius, jealous of the glory and popularity of Germanicus, recalled him from Germany in the year 17, and sent him to settle affairs in the East. Germanicus died, probably of poison, in Epidaphnæ, near Antioch, Oct. 9, 19. His wife, Agrippina, and two of her sons, were put to death by order of Tiberius; the third son, Caligula, was spared.

German Silver, a white alloy for tableware, consisting of nickel, copper, and zinc in various proportions. The best quality consists of four parts copper, two parts nickel, and two parts zinc.

German Southwest Africa, a German protectorate in West Africa, coast extending from Cape Frio to Walfisch Bay, inland to lon. 20° E.; area, estimated, 322,450 square miles; pop., estimated, 200,000. Coast unfertile and desolate; inland are richer tracts. The country is apparently rich in copper and in agricultural resources, though as yet it is quite undeveloped. Coffee is exported. The seat of administration is at Great Windhoek, 170 miles inland from Walfisch Bay.

Germantown, a former village in Philadelphia co., Pa.; since 1854 the 22d ward of Philadelphia. Considerable historical interest is attached to the place. It was settled by the Germans, under a grant from William Penn, in 1684, and on Oct. 4, 1777, a battle took place between the armies under Washington and the English under Howe. After several hours of severe struggle the Americans were defeated, the loss being about equal on both sides.

Germany, the name given to those states which constitute the German empire. Taken in this sense Germany is bounded on the N. by the Baltic, Denmark, and the North Sea; W. by Holland, Belgium, and France; S. by Switzerland and Austria; E. by Russia. The following table shows the elements of which the German empire as now constituted is made up:

KINGDOMS.	Area in sq. m.	Pop.	Pop. per sq. m.
1. Prussia	134,603	34,472,509	237
2. Saxony	5,787	4,202,216	654
3. Bavaria	29,282	6,176,057	199
4. Würtemberg ..	7,528	2,169,480	276
IMPERIAL TERRITORY.			
5. Alsace-Lorraine.	5,600	1,719,470	293
GRAND DUCHIES.			
6. Baden	5,821	1,867,944	296
7. Hesse	2,965	1,119,893	350
8. Mecklenburg-Schwerin ...	5,135	607,770	116
9. Mecklenburg-Strelitz	1,131	102,602	90
10. Oldenburg	2,479	399,180	151
11. Saxe-Weimar .	1,388	362,873	244
DUCHIES.			
12. Brunswick	1,424	464,333	305
13. Saxe-Meiningen	953	250,731	245
14. Saxe-Coburg and Gotha ..	755	229,550	287
15. Saxe-Altenburg.	511	194,914	352
16. Anhalt	906	316,085	323
PRINCIPALITIES.			
17. Waldeck	433	57,918	133
18. Lippe	469	138,952	287
19. Schaumburg-Lippe	131	43,132	315
20. Schwarzburg-Rudolstadt ..	363	93,059	244
21. Schwarzburg-Sondershausen	333	80,898	235
22. Reuss (elder line)	122	68,396	552
23. Reuss (younger line)	319	139,210	414
FREE TOWNS.			
24. Bremen	99	224,882	1,984
25. Hamburg	158	768,349	4,314
26. Lübeck	115	96,775	724
	208,830	56,367,178	250

The small island of Heligoland, now forming part of Prussia, was added to the empire in 1890.

The whole country may be considered as consisting of a mountain region in the S., with a great N. plain between it and the sea. This mountain region does not in average height exceed 5,000 feet and is extremely complicated, consisting of a great number of separate ranges, which ramify in all directions and become so interlaced with each other that the limits assigned to them are in many instances arbitrary. The great plain in the N. extends without interruption to the German Ocean and the Baltic and flattens down so much when it approaches them as in many places to require artificial protection from their waves. Its length W. to E. may be about 550 miles, and its average breadth 200 miles. To all appearance it has once been covered by the sea, alluvial deposits of great depth being spread over almost every part of its surface, and generally with so large a proportion of sand as to make it for the most part naturally unfertile.

Germany is remarkably well watered. Its central mountain region and plateau forms part of the great watershed of Europe and gives rise to more than one of its most important rivers. Among these are the Danube, the Rhine, though it neither rises nor terminates within Germany, flows within it for the greater part of its course; the Elbe, strictly speaking the greatest river of Germany; the Oder, Weser, Main, Neckar, Mosel, Ems, and Eider — all of which are navigable and important.

Germany possesses numerous and varied mineral riches, the most important of which are common coal and brown coal, iron, zinc, lead, and salt. In respect of its mineral wealth the Prussian monarchy especially takes a prominent place among the States of Europe, and in the production of zinc surpasses all other countries in the world. After Prussia the kingdom of Saxony is the most important mining country in Germany. Gold and silver are obtained in the Harz mountains and in the kingdom of Saxony; gold to a limited extent also in Bavaria. Iron is chiefly obtained in Prussia, Alsace-Lorraine, Bavaria, Brunswick, and Saxony. Copper, lead, and zinc are found chiefly in Prussia. Tin is found only in the kingdom of Saxony; quicksilver, antimony, and sulphur are mainly confined to Prussia; nickel and alum are obtained chiefly in the same

State; arsenic chiefly in Saxony, graphite in Bavaria, and blue and green vitriol in Prussia and Saxony. The most extensive coal beds lie in the kingdoms of Prussia and Saxony. Brown coal is obtained also in the duchy of Anhalt. Rock salt is obtained in considerable quantities in Prussia, Anhalt, and Wurtemberg. Marble, alabaster, kaolin, calamine, molybdenum, cinnabar, lime, asbestos, slates, millstones, freestones, trass and sundry precious stones — as amethysts, garnets, etc.— are also found in various localities. Germany is likewise extremely rich in mineral waters, including chalybeate, sulphurous, alkaline, saline, and warm of all kinds.

The climate of Germany is fairly uniform throughout, the lower latitude of the S. portions being compensated by greater elevation above the level of the sea. About a quarter of the surface is under forest, the largest proportional amount being in Hesse-Nassau. The chief trees are the beech and oak, manly in the W.; pines, chiefly on the N. plain; firs, in the mountainous districts; birch and alder, chiefly in the N.; larch, on the S. mountains; and chestnut in the Upper Rhine valley. The fauna is mainly a forest one, and includes 65 mammals and 225 birds. Notable species are the wolf, badger, mink, beaver, wild cat, wild boar, elk, bear, and one kind of tortoise.

Germany is becoming less and less an agricultural and more and more a manufacturing nation, but in many parts agriculture is still the main business of the population. About 65 per cent. of the total area is under cultivation, and of this more than half is under the chief cereals, fully a 16th under other corn crops and leguminous plants, nearly a sixth under potatoes, turnips, sugar beets, cabbages, etc., while rather less than a 50th represents orchards and gardens. The empire does not now grow the cereals in sufficient quantity to meet its own requirements, but is becoming increasingly dependent upon imports, especially of wheat and barley. Of the chief cereals, rye occupies the largest area, and next in order come oats, wheat, barley.

The recent progress of German manufacturing industry is without parallel among European nations, and is due in large measure to the great advance in technical education. The textile industries give employment to about a million persons, the chief branches being as follows: Cotton, wool spinning, woolen cloth, hosiery, carpets, linen weaving, jute goods, and silk. Three or four hundred thousand persons are employed in the iron and steel manufacture. Over 200,000 men are employed in the machinery manufacture, including locomotives, steam engines and machine tools. Shipbuilding and the manufacture of river steamers are carried on extensively. Other manufactures of importance are: Plate and bottle glass, earthenware, porcelain, boots and shoes, gloves, fur goods, gold and silver, brass, and bronze wares; toys, optical, medical, mathematical, musical, and other apparatus and instruments; telegraphic and electrical apparatus and machinery; calcium carbide and acetylene; drugs; aniline and alizarine dyes; soap and candles; beet sugar; brewing; distilling; furniture; cigars; lithographic stones, etc. The cottage system of industry is gradually being displaced by the factories, but it is still common in some branches.

The excellent river system has been supplemented, especially in recent times, by the construction of numerous canals. The total length of railway controlled by the Union of German railways in 1900 was 55,963 miles, of which 30,242 were in the German empire, the rest being in Austria-Hungary, Netherlands, Luxemburg, Rumania, etc. The total railway mileage of Germany in 1900 was 31,647. Of the total, 28,547 miles were State lines.

The territory of the customs union known as the Zollverein now comprises the whole empire. The total imports in 1901 were valued at $1,372,413,910, and the exports at $1,094,663,610. The imports came mainly from the United States, Great Britain, Austria-Hungary, Russia, France, and Belgium, and the exports were sent chiefly to Great Britain, Austria-Hungary, Russia, the United States, Netherlands, Switzerland, and France. The mercantile marine is steadily increasing in numbers, and now includes the fastest transatlantic steamers. On Jan. 1, 1901, it comprised 3,883 vessels, of which 1,390 were steamers. The principal seaports of Germany are Hamburg, Bremen, Lubeck, Stettin, Kiel, Danzig, and Konigsberg.

The constitution of the German empire is based on the decree of April 16, 1871. The presidency of the empire is the privilege of the King of Prussia, to whom belongs the hereditary title of German emperor. The legislative authority is vested in the Bundesrath, or Federal Council, and the Reichstag, or Imperial Diet. The prerogatives of the emperor are to represent the empire in its relation to other States, to declare war and conclude peace in the name of the empire, to contract alliances and conclude treaties with foreign States, to accredit and receive ambassadors. The assent of the Bundesrath is, however, necessary to a declaration of war, unless the imperial territory be invaded, or its coasts attacked. The emperor has also the supreme command of the army and navy, summons, opens, prorogues, and concludes the Bundesrath and Reichstag, appoints and dismisses officials of the empire, and superintends the consulate.

The Bundesrath consists of 58 representatives of the members of the empire. The Reichstag is elected by secret voting in all the States, every German above 25 years of age having a right to vote in the State in which he resides. Members of the army and navy cannot exercise their right of voting while their period of service lasts. Anyone may be returned to the Reichstag who has the right of voting and who has belonged for at least a year to one of the States. Proposals of laws are laid before the Reichstag by members of the Bundesrath, or by commissaries appointed by it. Every member of the Bundesrath has the right of appearing in the Reichstag, and has a right to be heard there at any time to represent the view of the government. No one can at the same time be a member of the Bundesrath and the Reichstag. The Reichstag lasts for five years. To dissolve it within that period a decree of the Bundesrath and the assent of the emperor are necessary. In case of a dissolution new elections must take place within 60 days, and the new Reichstag must meet within 90 days. To render an imperial law valid there must be a majority of votes in its favor both in the Bundesrath and in the Reichstag, and nothing else is required. Changes in the constitution may be effected in the same way. The empire has the sole right of legislating on all matters connected with the army and navy, the finances of the empire, commerce, posts and telegraphs (except in Bavaria and Wurtemberg), railways, in so far as they are deemed necessary for the defense of the country, and proposed modifications of the constitution of the empire. Certain other matters are left largely to the management of the individual States.

Service in the army or navy is obligatory on every German capable of bearing arms from the age of 17 to that of 45. Within this period seven years must be passed in the standing army or in the fleet (generally the years between 20 and 28), two of them in active service. The remainder of the seven years are passed in the reserve. The next five years are passed in the first class or "ban" of the Landwehr or Seewehr (land or sea defensive forces); service continuing in the second class or ban up to the age of 39. Under the Army Act of 1899 the peace effective is to be gradually increased so as to reach 495,500 in 1903, and that number is to be maintained till March 31, 1904. The war strength is now estimated at about 3,000,000 men.

The German war fleet has been greatly increased in recent years and the rate of increase is likely to be maintained for some time. The present strength of the imperial navy is as follows: 14 battleships of the line, 8 armored coast defense ships, 13 armored gunboats, 11 large cruisers, 25 small cruisers, 5 gunboats, 16 school ships, and 13 others, besides torpedo boats. The personnel of the navy is recruited from the maritime and semi-maritime population of the empire. The total is at present about 30,000 men.

By the law of Dec. 4, 1871, a uniform gold standard was introduced for the whole German empire. The same law ordered the adoption of the mark as the general unit of the German coinage, commencing Jan. 1, 1875. By the supplementary law of May 6, 1873, it was enacted that two-mark and five-mark pieces should also be issued, the former in silver and the latter partly in gold and partly in silver. A mark is equal to 23 cents in United States gold.

Since Jan. 1, 1872, the French metrical system of weights and measures has been in force throughout the German empire.

Germany, especially the S. part, was covered in the time of the Romans by extensive marshes and forests which were inhabited by the elk, the urus, the bear, the wolf, the boar, the wild cat, and the deer. The population was large, however, particularly in the N. and E., the chief indication of which is the number of the armies, or rather of the armed tribes which these districts from time to time sent out, and by which at length the Roman empire was overwhelmed.

From language and other indications the Germans are supposed to have migrated from Upper Asia, passing by the Caucasus and the N. of the Caspian and Euxine seas, to Europe. This immigration must have taken place in non-historical times. There is no mention of it in the national legends and the people considered themselves autochthones, as they were also regarded by the Romans.

The ancient Germans bore the greatest resemblance to the Celts. They are described as tall, handsome, fair, with blue eyes, which are said to be fierce in expression, and light or red hair, which they rendered bright with a soap which they used as a dye. Both men and women, except slaves, whose hair was cut for distinction, wore the hair long, and red hair which became fashionable among the Roman ladies, was made an article of export. The women are said to have been almost equal in size and strength to the men. The Germans cultivated the land, but some tribes were half nomad, and the chief occupations of all were war and the chase together with the breeding of cattle.

The accounts of the religion of the Germans are considerably obscured by the Roman habit of giving their own names to foreign gods. They worshiped Woden or Odin; Thor, the god of Thunder; Freir, the wife of Woden; Tuisco, the ancestor of their race; Mannus, his son, and other deities, besides the sun, moon, and stars. Their worship was conducted to a great extent in the open air in mountains. forests, rocks, and caves. Their priesthood, though they had a distinct caste, seems to have possessed a patriarchal character. A father was the priest of his family. Each tribe had its peculiar secondary deities, both benevolent and malignant. The priests possessed considerable power. From their religious rites they told the will of the deity in regard to public undertakings, which means that they dictated their own will or the orders of their chief to the people. They presided in the popular assemblies. There were also priestesses who possessed the gift of prophecy. Sometimes human sacrifices were offered. The booty taken in war, and sometimes prisoners, were sacrificed to the gods.

The Germans overran the Roman empire in its decline, and a Germanic empire arose, which existed down to recent times. The creation of the present German empire was largely the work of Prince Bismarck, who became the first imperial chancellor. He successfully sought to secure Germany from attack, so as to enable her to develop her industries in peace, partly by the maintenance of a powerful, well-trained army, and partly by alliances with other powers. In 1879 he formed an alliance with Austria, and three years later with Italy. This Triple Alliance, as it is called, has been renewed in several subsequent years. During the earlier years of the reconstituted empire he was engaged, with the support of the powerful National Liberal party, in a contest with the papacy regarding the relations between the imperial government and the Roman Catholic religious societies of Germany. The Jesuits and similar orders were expelled in 1872, and a law was passed in 1874 making marriage a civil contract; but in 1880 and the years immediately following he found it expedient to open negotiations with papal representatives. Ultimately he admitted defeat by practically repealing the "Falk laws," as the antipapal legislation was called after a Prussian minister of worship, and with this repeal the long so-called "Kulturkampf" ended. It was Bismarck who in 1884 inaugurated German colonial development by declaring a protectorate over territories in Southwest Africa. Since then Germany has acquired Togoland, the Kamerun region, German East Africa, part of New Guinea, the Marshall, Caroline, Pelew, and other island groups in the Pacific, beside one of the Samoan Islands. In his campaign against social democracy which has become an important factor in German politics, Bismarck did not rely exclusively on force and repression. He sought to destroy the social discontent in which much of the strength of Socialism lay by passing measures intended to improve the condition of the working classes. In this respect his policy has also been maintained to the present time.

Probably the most striking feature in the recent history of Germany is the rapid development of its manufacturing industries and its foreign trade. The mercantile navy is steadily growing in size and importance, and the emperor has recently induced the Reichstag to vote large amounts for the increase of the war navy.

Germinal, the 7th month of the first French republican calendar, March 21–April 19.

Germination, in botany, the first act of growth which takes place in an embryo plant.

Germ Theory of Disease, the theory that certain diseases are communicated from an infected person to an uninfected one by living organisms which gain access to the body of the afflicted person by the air or food, or drink, and which, growing and multiplying in the body they invade, produce the changes characteristic of the particular disease. The period during which the living particles of contagious matter retain their vitality, like the rate of their growth and multiplication, varies in different cases, but it is limited in all. Few, if any, resist the destructive influence of a temperature of 300° F., while most succumb at the temperature of 200° or even less, particularly if exposed for some time. Animal poisons generally are destroyed by boiling, and clothes, sheets, etc., infected, may be rendered pure by being exposed to a temperature of 300° F. These living organisms are grouped together as microbes or micro-organisms. Dr. Koch of Berlin, published in 1876 a paper giving a full account of the life history of the bacillus organism which had been observed in animals dead of splenic fever; and in 1877 the great French chemist, Pasteur, proceeded to investigate the subject, and his investigations conclusively support the germ theory of disease. In 1882, Dr. Koch, of Berlin, announced the discovery of a micro-organism in tuberculosis, a disease believed to be the chief, if not the only, cause of consumption of the lungs. These microbes are found not only in the lungs of persons who have died of tubercle, but also in the spit of tubercular and consumptive patients, and multiply also by spores. Thus it is that the spit of a consumptive patient, even after it has dried up, may be capable of imparting the disease, owing to spores being scattered in the air.

All investigation seems to point to the fact that every infectious or contagious disease is due to some form of micro-organism for each particular disease. Each organism produces its own disease and none other; and the special disease cannot arise unless its germ has gained entrance to the body. The channels through which these germs obtain entrance are innumerable, but they have one origin and one only, and that is a preceding case of disease. The "germ theory" affords the hope and suggestion of a method of diminishing, if not of getting rid of, such diseases altogether, and to some extent also indicates the direction in which their cure is to be sought. If the particular microbe of each contagious disease were known, the condition of its life and activity understood, there is great probability that its multiplication in the living body could be arrested, and the disease thus cured. Even without such knowledge, however, the germ theory indicates that the means for arresting the spread of contagious diseases and diminishing their occurrence consist in preventing the spread of the germs from an existing case of disease.

Gerok, Karl, a German religious poet; born in Vaihingen, Wurtemberg, Jan. 30, 1815. He is the author of many collections of verse, mostly of a deeply religious and devotional character. He died in Stuttgart, Wurtemberg, Jan. 14, 1890.

Gerome, Leon, a French painter; born in Vesoul, France, May 11, 1824. He has a high reputation as a colorist and painter of the human figure.

Gerona, a city and capital of the province of Gerona, Spain; 65 miles N. E. of Barcelona. It contains a beautiful Gothic cathedral of the 14th and 15th centuries. The town was formerly a place of great strength, and has undergone several notable sieges, particularly in 1653, 1684, 1694, 1706, and 1809, on each occasion by the French.

Gerrish, Theodore, an American author; born in Houlton, Me., June 19, 1846; received an academic education; served during the Civil War in the 20th Maine regiment, and was wounded four times; later became a Methodist Episcopal clergyman.

Gerry, Elbridge, an American statesman; born in Marblehead, Mass., July 17, 1744; was a member of the Continental Congress in 1776–1780 and 1783–1785; delegate to the Constitutional Convention in 1789; member of Congress from Massachusetts, in 1789–1793; commissioner to France in 1797–1798; governor of Massachusetts in 1810–1812; and Vice-President of the United States in 1813–1814. It was during his term as governor that an unsatisfactory redistricting of the State took place, in which he was supposed to have taken part, whence arose the term "gerrymander," now generally applied to the process of so arranging electoral districts as to give a majority of Congressmen, or State Legislators, as the case may be, to the party having the minority in the total popular vote of the State. He died in Washington, D. C., Nov. 23, 1814.

Gerster, Etelka, a Hungarian singer; born in Kaschen, Hungary, June 16, 1857; was a pupil of Madame Marchesi in Vienna. She made her first appearance in Venice in 1876, as Gilda, in "Rigoletto." She has made successful tours in the United States and Europe.

Gerstacker, Frederick, a German author; born in Hamburg, Germany, May 10, 1816. He emigrated while an apprentice to New York. He traveled on foot through the United States and Canada, performing any work that was offered to him. About 1842 he returned to Germany and published his travels, which became very popular and were translated into several languages. In 1849–1852 he journeyed around the world, and in 1862 explored in South America. He died in Brunswick, Germany, May 31, 1872.

Gerstenberg, Heinrich Wilhelm von, a German author; born in Tondern, Schleswig, Jan. 3, 1737. As a critic he paid special attention to Shakespeare and to the old dramatists of England. He died in Altona, Holstein, Nov. 1, 1823.

Gervas, a small verbenaceous shrub of the West Indies and tropical America. It has been introduced as Brazilian tea, and it is also frequently employed as an adulterant of tea proper.

Gervase of Canterbury, an English monk; born about 1150. He wrote a chronicle of the reigns of Stephen, Henry II., and Richard I., and a history of the archbishops of Canterbury down to Hubert Walter. These works are valuable especially as elucidating the contemporary relations between Church and State. He died in the early part of the 13th century.

Gervinus, Georg Gottfried, a German historian; born in Darmstadt, Hesse, May 20, 1805; died in Heidelberg, Baden, March 18, 1871.

Gesenius, Friedrich Heinrich Wilhelm, a German Orientalist; born in Nordhausen, Saxony, Feb. 3, 1786; died in Halle, Saxony, Oct. 23, 1842.

Gesner, Abraham, a Canadian geologist; born in Cornwallis, N. S., May 2, 1797; studied medicine in London, and returned to Nova Scotia. Later he became interested in scientific researches. In 1838 he was appointed to examine and report on the geological resources of the lower provinces of British North America. Afterward he discovered how to produce oil suitable for lamps from bituminous shale and cannel coal. He thus originated the discovery of "kerosene" (which name he gave his oil) in the United States. He died in Halifax, N. S., April 19, 1864.

Gesner, Konrad von, a Swiss naturalist; born in Zurich, Switzerland, March 26, 1516. He collected more than 500 plants undescribed by the ancients, and appears to have been the first who made the great step toward a scientific classification of distinguishing genera by the fructification. He died in Zurich, Switzerland, Dec. 13, 1565.

Gesta Romanorum, "Deeds of the Romans," title of a collection of short tales, legends, etc., in Latin, very popular in the Middle Ages. After the Reformation the book fell into oblivion.

Gessler, Albrecht, or **Herman,** called also Gessler von Bruneck (in Swiss legendry), was in 1300 appointed joint-governor along with Berenger von Landenberg, of the Waldstadten or forest cantons (Schwytz, Unterwalden, and Uri), by Albrecht I. of Austria. According to the traditions connected with William Tell his oppressive edicts and wanton cruelty so enraged the inhabitants that a conspiracy was formed against him, and he was shot by Tell in a narrow pass near Kussnacht in 1307.

Gestation, in physiology, the act of carrying young from the time of conception to that of partiurition. The average time of a woman's pregnancy is 9 solar months, or about 280 days, though it may be as few as 7 or as many as 10. The period of gestation is shorter in carnivorous than in herbivorous animals, varying from 21 days, in the case of the guinea pig, to 21 months that of the elephant.

Getæ, a people of Thracian extraction, first mentioned as dwelling on the right bank of the Danube, but in the middle of the 4th century B. C. they crossed that river and settled in Transylvania and Wallachia. In A. D. 106 the Dacians and Getæ were subdued by Trajan, their country being added to the empire. Subsequently the Getæ became fused with the Goths, who invaded their lands, and afterward carried many of them with them in their W. migrations.

Gethsemane, an olive garden or orchard near Jerusalem, memorable as the scene of the last sufferings of our Lord. The traditionary site of this garden places it on the E. side of the city, a very little beyond the Kedron, near the base of Mt. Olivet. It contains some very old olive trees, piously regarded as having stood there in the time of our Lord.

Gettysburg, Battle of, fought July 1-3, 1863, between the Union army under General Meade, and the Confederates under General Lee. During May the armies lay fronting each other upon the Rappahannock. Early in June Lee began his movement for the invasion of Pennsylvania, crossing the Potomac on the 24th and 25th, and reaching Chambersburg, Pa., on the 27th. General Hooker, then in command of the Army of the Potomac, moved in the same general direction, but on the 28th was relieved, and the command given to Meade. In order to prevent his communications from being severed, Lee turned back toward Gettysburg to give battle. Meade had intended to give battle at a spot several miles from Gettysburg, near which was, however, a small portion of his army. This came into collision a little before noon, July 1, with the advance of Lee, and was forced back, taking up a strong position on Cemetery Hill, in the rear of Gettysburg. Hancock, who had been sent forward to examine the position, reported that Gettysburg was the place at which to receive the Confederate attack, and Meade hurried his whole force to that point. The action on the second day, July 2, began about noon with an attempt made by Lee to seize Round Top, a rocky hill from which the Union position could be enfiladed. When this day's fighting closed Lee was convinced that he had greatly the advantage, and he resolved to press it the next day. On the morning of July 3 an attempt was made upon the extreme Union right, but repelled. The main attack on the center was preluded by a cannonade from 150 guns. which was replied to by 80, little injury being inflicted by either side. About noon the Union fire was slackened in order to cool the guns, and Lee, thinking that the batteries were silenced, launched a column of 15,000 or 18,000 against the Union lines. Some of this column actually surmounted the low works, and a brief hand-to-hand fight ensued. But the column was practically annihilated, only a small portion escaping death or capture. The forces on each side were probably about 80,000, though all were not really engaged. No official report of the Confederate loss was ever published; the best estimates put it at about 18,000 killed and wounded, and 13,600 missing, most of them prisoners. The Union loss was 23,187, 16,543 of whom were killed and wounded.

Gevaert, Francois Auguste, a French composer; born in Huysse, near Oudenarde, France, July 30, 1828, He composed several successful operas, and was inspector of music at the Academy of Music, Paris, from 1867 to 1870. Since that time he has devoted himself to the history of music.

Geyser, an intermittent hot spring, the most notable specimens being those in the Yellowstone region of the Rocky Mountains and those of the S. W. division of Iceland, about 30 miles from Mount Hecla. Nearly 100 of the latter are said to break out within a circle of 2 miles. Few of them play longer than five or six minutes at a time, though sometimes they go on for half an hour. The largest is called the Great Geyser. It has a pipe 78 feet in vertical depth, and from 8 to 10 feet in diameter, but gradually widening as it rises into the basin. The latter is 56 feet long by 46 feet broad, and is lined with an incrustation of silica deposited from the hot water, the process being aided by the alkali soda, which, with minute quantities of various salts, exists in the water. When the geyser is about to act, subterranean noises are heard like the distant firing of cannon, and the earth is slightly shaken; then a column of the liquid element is thrown up to the height of 100 to 200 feet. Steam after a time makes its way out of the rent, and the fountain ceases to play. The second in size is the Strokkur. If stones or turf be thrown down its pipe, an eruption will follow in a few minutes, and eject them with great force. Geyser action is produced by the heating of the lower part of the geyser tube. There are also some remarkable geysers in New Zealand, in the Northern Island.

Geyter, Julius de, a Flemish poet; born in Lede, Belgium, May 25, 1830. He was in early life a school-teacher and later a law-court official, but for many years he has been connected with a bank in Antwerp. His songs, which deal with national heroic topics, and his cantatas, are exquisitely melodious and metrically perfect, and are favorites with his people.

Gfrorer, August Friedrich, a German historian; born in Calw, in the Black Forest of Wurtemberg, March 5, 1803. All his works are learned, often perversely so; his conclusions are too often more ingenious than sound. He died in Carlsbad, Bohemia, July 6, 1861.

Ghats, or **Ghauts, Eastern** and **Western,** two converging ranges of mountains, which run parallel with the E. and W. coasts of Southern India, and meet at Cape Camorin, enclosing the ocean.

The name Ghats is also applied to the flights of steps, whether intended as landing places or as bathing stairs, which line the river banks in towns and places of pilgrimage in Northern and Central India. Most great rivers, and especially the Ganges, possess many ghats; but they are also built on the margins of lakes, as at Pushkar and Sagar, or even of tanks. The uniformity of the long lines of steps is often broken by shrines or temples, built either close to the water's edge or at the top; and on these steps are concentrated the pastimes of the idler, the duties of the devout, and much of the necessary intercourse of business.

Ghazni, a town of Afghanistan, below a spur of a range of hills, at an elevation of 7,729 feet, 84 miles S. W. of Kabul. It is a place of considerable commercial importance. In the neighborhood of Ghazni there are several ruins and monuments of its former greatness, such as the tomb of Mahmud, Mahmud's dam in the Ghazni river, and many Mohammedan shrines. The celebrated gates of Somnath were kept at Ghazni from 1024 to 1842. Pop. 10,000.

It was under Mahmud (997–1030) that the Ghaznevids reached their highest point of splendor and renown. This prince repeatedly invaded India, and carried his conquering arms as far as Kurdistan and the Caspian on the W. and to Samarkand on the N. He was the first monarch in Asia to assume the title of sultan. Bahram

Shah, ruler of Ghazni from 1118 to 1152, was at length driven from his apital. The Ghaznevid dynasty came o an end in 1186.

Ghee, or **Ghi,** a kind of butter in se among the Hindus; made from the ilk of the buffalo or the cow. The ilk is boiled for an hour or so, and ooled, after which a little curdled ilk is added. Next morning the urdled mass is churned for half an our; some hot water is then added, nd the churning continued for another half hour, when the butter forms. When, after a few days, it becomes ancid, it is boiled till all the water s expelled, and a little more curdled ilk added, with some salt or betel eaves, after which it is put into pots. It is a favorite article of consumption mong rich Hindus.

Gheel, a colony for the insane in Belgium, 26 miles E. S. E. of Antwerp, in a comparatively fertile spot, n the midst of an extensive sandy waste, called the Campine. About 1,300 insane persons are lodged with he citizens of this community, and re controlled and employed by them, nd this without recourse to walls or ther asylum appliances, and with little coercion of any kind. The quieter ufferers reside generally one in each amily in the village, the more excited n separate farmhouses at some distance on the confines of the commune, while those requiring medical treatment are temporarily accommodated n the infirmary in Gheel. The support of the patients is in most cases uaranteed by the State. Pop. 12,026.

Ghent (French, Gand; Flemish Gend or Gent), a town in Belgium, apital of the province of East Flanders, at the confluence of the Lys with he Scheldt. It is upward of 6 miles n circumference, and is divided by anals into a number of islands connected with each other by bridges. Except in some of the older parts, it is well built, and has a number of fine romenades and many notable buildings. Among the latter are the cathedral of St. Bavon, dating from the 13th century; the church of St. Nicholas, the oldest in Ghent; the church of St. Michael, with a celebrated Crucifixion by Vandyk; the university, a handsome modern structure, with a library of about 100,000 volumes and 700 manuscripts; the City Hall, the belfry, a lofty square tower surmounted by a gilded dragon, and containing chimes of 44 bells; the new Court House; the Marche du Vendredi, an extensive square, interesting as the scene of many important historical events; and Les Beguinages, extensive nunneries founded in the 13th century, the principal occupation of whose members is lace-making. Ghent has long been celebrated as a manufacturing town, especially for its cotton and linen goods and lace. Ghent was mentioned as a town in the 7th century. In the 9th century Baldwin, the first Count of Flanders, built a fortress here against the Normans. Under the counts of Flanders Ghent continued to increase. Two great revolts took place under the leadership of the Van Arteveldes (1338 and 1369) against Burgundy, and again in the 16th century against Charles V., and the citizens of Ghent, besides losing their privileges, had to pay for the erection of a citadel intended to keep them in bondage. In 1792 the Netherlands fell under the power of France, and Ghent became the capital of the department of Escaut (Scheldt). In 1814 it became, along with Flanders, part of the Netherlands, till the separation of Belgium and Holland. Americans gratefully remember the sympathy expressed by the magistrates of Ghent at the time of the treaty of peace which terminated the War of 1812. Pop. (1900) 160,949.

Ghent, Treaty of, a treaty between the United States and Great Britain, concluded at Ghent, Dec. 24, 1814, which terminated the War of 1812.

Gherardi, Bancroft, an American naval officer; born in Jackson, La., Nov. 10, 1832; he entered the navy as midshipman from Massachusetts in 1846, and was at the Naval Academy in 1852. He was lieutenant on the "Lancaster," of the Pacific squadron, at the commencement of the Civil War, and in 1862 was made lieutenant-commander. During the war he commanded the "Chocorua," and "Port Royal," being on the latter vessel in the battle of Mobile Bay, in which he was distinguished for bravery and gallantry. He became commander in 1866; captain in 1874; commodore in 1884; and rear-admiral in 1887; he was commandant of the Brooklyn navy yard in 1886; commanded the North Atlantic Squadron; and directed the Columbian naval review in New York harbor in 1893. He retired in 1894.

Gherardi del Testa, Tommaso, an Italian comedy-writer; born in Terriciuola, near Pisa, Italy, 1815. Died near Pistoja, Italy, Oct. 13, 1881.

Ghetto, the term is employed in Italian and other cities, to indicate the quarters set apart for the residence of the Jews.

Ghibellines, a political party in Italy of the 12th to the 15th centuries. On the death of Lothaire II., Emperor of Germany, Dec. 4, 1137, Conrad, Duke of Franconia and Lord of Weiblingen (which by corruption became Ghibelline), was elected his successor. His right to the imperial throne was, however, disputed by Henry the Proud, Duke of Saxony and Bavaria, who was in consequence declared an outlaw and shortly afterward died. His adherents transferred their allegiance to his son, Henry the Lion, at that time a boy of 10 years old, and the whole empire was divided into the partisans of Conrad, who assumed the name of Ghibellines, and those of Henry, or the Guelphs. The strife between the two parties subsided in Germany, but continued in Italy, resulting in war in 1159. The supporters of the Popes were termed Guelphs and those of the emperors Ghibellines. Charles of Anjou expelled the Ghibellines from Italy in 1268; but the contest between the two factions continued till the French invasion in 1495 united them against a common enemy.

Ghiberti, Lorenzo, an Italian sculptor; born in Florence about 1378. He was engaged in painting in fresco at Rimini, in the palace of Prince Pandolfo Malatesta, when the priori of the society of merchants in Florence invited artists to propose models for one of the bronze doors of the baptistery of San Giovanni. The offering up of Isaac was to be executed in gilt bronze, as a specimen of the work. The judges selected the works of Donatello and Ghiberti as the best, but the former voluntarily withdrew his claims, giving the preference to Ghiberti. After 21 years' labor Ghiberti completed the door and at the request of the priori executed a second after almost as long a period. Michael Angelo said of these, that they were worthy of adorning the entrance to paradise. During these 40 years Ghiberti also completed a statue of John the Baptist for the Church Or-San-Michele, two bas-reliefs for the baptistery of the Cathedral of Sienna, and a number of other works, all of which are still preserved. He died in Florence about 1455.

Ghika, Helena, a Rumanian author, better known by her literary pseudonym of Dora d'Istria; born in Bucharest, Rumania, Jan. 22, 1829. Profoundly instructed in the classics, the princess added to her acquirements by travels through Germany, France, and Italy an extensive knowledge of modern languages and literature. At 15 she commenced a translation of the "Iliad" into German, and not long after wrote several pieces for the theater. On her unhappy marriage in 1849 with Prince Koltzoff-Massalsky she accompanied her husband to the court of St. Petersburg; but from 1855 she resided mainly at Florence, where she died, Nov. 22, 1888.

Ghirlandajo II., Domenico Curradi, nicknamed Il Ghirlandajo ("the garland maker"), an Italian painter; born in Florence, Italy, in 1449; died in Florence, Italy, Jan. 11, 1494.

Ghislanzoni, Antonio, an Italian dramatist; born in Lecco, Italy, in 1824. He died in Lecco, Italy, July 18, 1893.

Ghost Dance, a religious ceremony which originated among the Piute Indians in Nevada about 1889, so named from the fact that the dancers wear a white shirt over the ordinary dress. It was the outcome of a religious belief which maintained that a messiah was soon to appear, who would rid the land of the white man and restore to the Indians all their rights. The ghost dance is held at night, men and women joining hands and circling around singing the ghost songs, which are principally chants in the form of messages from their spirit friends. Sometimes the participants appear to fall into a trance during which they re supposed to commune with resi-ents of the other world. The Sioux utbreak of 1890–1891 was due in-irectly to the ceremonies of this dance nd the United States government ought to suppress it. Since that time o trouble has arisen, though it is still ractised by the Indians.

Ghost Moth, a moth. The male as the wings snowy white, with ie costæ and fringes brownish; the emale has the fore wings deep dull ellow, with a streak and some spots rick red. The males, the sex with ie ghostly appearance, have a pecu-ar flight, oscillating backward and orward like a pendulum, but remain-ng for some time at one spot.

Ghurkas, or **Ghoorkas,** a native ace in the kingdom of Nepal. They re of Hindu descent and speak a ialect derived from the Sanskrit. hey are largely employed as soldiers n the Anglo-Indian army and are mong its best troops.

Giacosa, Giuseppe, an Italian ramatist; born in Colleretto-Parella, iedmont, Oct. 21, 1847. He is the uthor of both dramas and comedies, nd his treatment of contemporary talian social life is irresistibly satir-cal.

Giannone, Pietro, an Italian au-hor; born in Ischitella, Italy, May 7, 676. He studied law in Naples, and fter winning a high place as an advo-ate retired to give himself up to the xecution of his great work, the "Civil istory of the Kingdom of Naples" 1723). The severity with which iannone treated the Church drew pon him the persecutions of the court f Rome. The offensive publication as burned, and the author excom-unicated. Giannone therefore quitted aples, 1723, was later driven succes-ively from Vienna and Venice, and nally took refuge in Geneva. Here e wrote his "Triregno" a bitter at-ack on the papal pretensions. In 1736, aving been enticed by a government missary to enter the Sardinian States, e was seized and imprisoned in the itadel of Turin, where he died March , 1748.

Giauque, Florien, an American awyer; born near Berlin, O., May 11, 843; was graduated at Kenyon Col-ege in 1869; served in the Union army in 1862–1865; was admitted to the bar in 1875 and began practice in Cincinnati. His publications include "Present Value Tables"; "Drainage Laws"; "Naturalization and Election Laws of the United States"; "Ohio Election Laws"; etc.

Giant Beds, tumuli in Germany, the graves of the ancient inhabitants of the country. They are of different sizes and sometimes very large, generally inclosed with stones of such weight as would seem to have required machinery to move them. Earthen vessels, metallic ornaments, sacrificial stones, knives, battle-axes, etc., are sometimes found in them; and sometimes also human skeletons in the last stage of decay; sometimes they are entirely empty.

Giants, people of extraordinary stature. We find in history mention made of giants, and even of whole races of remarkable stature, but this in general occurs only at an early stage of civilization when the national mind is apt to exaggerate anything unusual. The first mention of giants in the Bible is in Gen. vi. 4, where the Hebrew word is nephilim, a word which occurs only in one other passage, where it is applied to the sons of Anak, who dwelt about Hebron, and who were described by the terrified spies as of such size that compared with them they appeared in their own sight as grasshoppers. The giants of old Greek or of Norse mythology have, of course, merely a symbolic existence, representing benignant or adverse forces of nature on which man might count in his struggle to reduce the world around him into some kind of order. The tales of old writers regarding gigantic human skeletons have now no importance, it being mostly certain that these bones do not belong to giants, but to animals of the primitive world which, from ignorance of anatomy, were taken for human bones. A gigantic human skeleton, however, the largest ever recorded, was found in 1899, near Miamisburg, O., in a locality which contains many relics of the mound builders. It is of prehistoric age and is fossilized. It must have belonged to a man 8 feet 1½ inches high, and extremely well proportioned. The skull is of an extremely low order and resembles that of the gorilla, the jaws projecting beyond the face. The teeth are remarkably strong and beautiful in form, and their owner must have lived on a vegetable diet.

The following are among authentic instances of persons who attained to the stature of giants: The Roman Emperor Maximin, a Thracian, nearly 9 feet high; Queen Elizabeth's Flemish porter, 7 feet 6 inches; C. Munster, a yeoman of the guard in Hanover, who died in 1676, 8 feet 6 inches high; Cajanus, a Swedish giant, about 9 feet high, exhibited in London in 1742; C. Byrne, who died in 1783, attained the height of 8 feet 4 inches; Patrick Cotter O'Brien, who lived about the same time, was 8 feet 7¾ inches; a Swede in the celebrated grenadier guard of Frederick William I. of Prussia stood 8½ feet. In 1844 died Pauline Wedde (called Marian), over 8 feet 2 inches at the age of 18. The following are still or were quite recently exhibiting: Anna Swan, a native of Nova Scotia, above 8 feet high; her husband, Captain Bates, a native of Kentucky, of the same height; Chang-wu-gon, the Chinese giant, 7 feet 9 inches high.

Giants' Causeway (deriving its name from a legend that it was the commencement of a road to be constructed by giants across the channel to Scotland), a natural pier or mole of columnar basalt, projecting from the N. coast of Antrim, Ireland, into the North Channel, 7 miles N. E. of Portrush. It is part of an overlying mass of basalt from 300 to 500 feet in thickness, which covers almost the whole county of Antrim, and the E. part of Londonderry.

Gibbet, a gallows on which the bodies of criminals were suspended after execution, sometimes encased in an iron frame, near the spot where the crime was committed. This was done for the purpose of striking terror into the evil-minded, and of affording "a comfortable sight to the relations and friends of the deceased." The practice was first recognized by law in 1752, was abolished in 1834.

Gibbon, a genus of tailless anthropoid apes, natives of the East Indies. They are nearly allied to the orangs and chimpanzees, but are of more slender form, and their arms so long as almost to reach to the ground when they are placed in an erect posture. The gibbons are inhabitants of forests, their long arms enabling them to swing themselves from bough to bough, which they do to wonderful distances and with extreme agility. They cannot, however, move with ease or rapidity on the ground. The conformation of the hinder extremities adds to their difficulty in this, while it increases their adaptation to a life among the branches of trees, the soles of the feet being much turned inward. None of the gibbons are of large size. There are some 8 or 10 species.

ACTIVE GIBBON.

Gibbon, Edward, an English historian; born in Putney, April 27, 1737; studied at Westminster School, Magdalen College, Oxford, and Lausanne. In 1763 he went to Italy; and while sitting amid the ruins of the Capitol at Rome, he conceived the idea of writing the history of the decline and fall of that city. In the meantime he joined M. Deyvurdun, a Swiss scholar, in publishing a journal called "Literary Memoirs of Great Britain," which met with no success. In 1770 he began his celebrated history of the "Decline and Fall of the Roman Empire." He died in London, Jan. 16, 1794.

Gibbons, James, an American clergyman; born in Baltimore, Md., July 23, 1834; was taken to Ireland by his parents early in life. Returning to the United States in 1848 he ettled in New Orleans; was educated t St. Charles College, Maryland, and t Mary's Seminary, Baltimore; was rdained to the Roman Catholic priesthood in June, 1861; and appointed as ssistant in St. Patrick's Cathedral, Baltimore. Later he became the private secretary of Archbishop Spalding, nd chancellor of the diocese. In 1868 e was made vicar-apostolic of North Carolina, with the rank of bishop; nd in 1877 became Archbishop of Baltimore. He was elevated to the cardinalate in 1886, being the second Roman Catholic in the United States o receive that promotion. He went o Rome in the summer of 1903, and ook part in the election of Pius X. as uccessor to Leo. XIII.

Gibbons, James Sloane, an American banker; born in Wilmington, Del., July 1, 1810; early became a strong abolitionist. In 1863 his house in New York was sacked by a mob, during the draft riots, because he had illuminated it in honor of Abraham Lincoln. His fame rests chiefly on his patriotic song, which was very popular during the Civil War, "We Are Coming, Father Abraham, Three Hundred Thousand More." He died n New York city, Oct. 17, 1892.

Gibbs, John Blair, an American physician; born in Richmond, Vt., about 1858; was graduated at Rutgers College in 1878 and at the New York College of Physicians and Surgeons in 1882. In 1898 he decided to enter the navy, and was made assistant surgeon on the monitor "Miantonomoh," but a little later was assigned to the "Panther," which landed 600 marines at Guantanamo Bay, Cuba. On June 12, after the landing, when the Spaniards made an attack on the Americans he was one of the four men killed in the action.

Gibbs, Oliver Wolcott, an American chemist; born in New York city, Feb. 29, 1822; was graduated at Columbia College in 1841 and at the New York College of Physicians and Surgeons in 1845; was Professor of Physics and Chemistry in the College of the City of New York in 1849–1863; and Rumford Professor in Harvard University in 1863–1887. He has made many valuable chemical researches, and contributed largely to scientific periodicals, principally "The American Journal of Science and Arts," of which he was one of the editors for many years. Dr. Gibbs is the only American honorary member of the German Chemical Society; is one of the original members of the National Academy of Sciences, of which he is an ex-president.

Gibeon, a city of ancient Palestine on a hill among the mountains of Benjamin, 5 miles N. W. of Jerusalem. When the five kings of the Amorites besieged Gibeon for having entered into a traitorous compact with the common enemy of all the Canaanites, Joshua hastened to its help, and overthrew the besiegers with great slaughter. It was there that Joshua in the words quoted from the book of Jashar (Josh. x: 12), commanded the sun to stand still upon Gibeon, and the moon in the valley of Ajalon.

Gibing, or **Jibing,** in sailing with fore and aft sails, the act of shifting over the boom, when the wind is astern or at any point abaft the beam, so that the wind may be brought to bear on the sail on the reverse side of the vessel to that in which it was felt previous to the operation. This maneuver may be described as the reverse of that of tacking.

Gibraltar, a town and strongly fortified rocky peninsula near the S. extremity of Spain, belonging to Great Britain. It is connected with the mainland by a low sandy isthmus, 1½ miles long and ¾ miles broad, known as the "neutral ground," with Gibraltar Bay on W., the open sea on the E. and S. The highest point of the rock is about 1,400 feet above sea-level; its N. face is almost perpendicular, while its E. side exhibits tremendous precipices. On its S. side it is almost inaccessible, making approach from seaward impossible; the W. side, again, although very rugged and precipitous, slopes toward the sea; and here the rock is secured by extensive and powerful batteries, rendering it apparently impregnable. Vast sums of money and an immense amount of labor have been spent in fortifying this celebrated stronghold, which, as a coaling station, depot for war material, and a port of refuge in case of war, would form one of the most important points of support for British naval operations and commerce. The town is also on the W. of the peninsula.

The town of Gibraltar is situated on the W. side of the peninsula, terminating in Europa Point, and thus fronts the bay. It consists chiefly of one spacious street about half a mile in length, lined with shops, and paved and lighted. The principal buildings are the governor's and lieutenant-governor's houses, the admirality, naval hospital, victualing office, and barracks, and a handsome theater. Its water supply is derived from the rainfall. Gibraltar is a free port, and has a considerable shipping trade, being an entrepot for the distribution of British manufactures. The chief export is wine. The administration is vested in the governor, who is also commander-in-chief of the troops. Every precaution is taken to prevent the immigration into the town of new residents. It was ultimately taken by the Spaniards from the Moors in 1462, fortified in the European style, and so much strengthened that the engineers of the 17th century considered it impregnable. It was taken, however, after a vigorous bombardment in 1704 by a combined English and Dutch force under Sir George Rooke and Prince George of Darmstadt, and was secured to Great Britain by the peace of Utrecht in 1713. Since then it has remained in British hands, notwithstanding some desperate efforts on the part of Spain and France to retake it. In 1779, Great Britain being then engaged in a war with the United States and with France, a last grand effort was made by Spain to recover Gibraltar. The siege lasted for nearly four years. It was heroically and successfully defended, however, by General Elliott (afterward Lord Heathfield) and the garrison. Since that time, in the various British and Spanish, and also French wars, Gibraltar has only been blockaded on the land side.

Gibraltar, Straits of, the straits connecting the Mediterranean Sea with the Atlantic Ocean. They narrow toward the E. with their width varying from 15 to 24 miles. Length, E. to W., about 36 miles. Through these straits a constant current runs so strongly from the Atlantic that sailing vessels bound W. can pass them only by the aid of a Levanter, or strong breeze from the E. It is believed that the waters of the Mediterranean find an outlet here by means of an undercurrent.

Gibraltar Monkey, originally an African monkey, a colony of which is wild on the rocks of Gibraltar.

Gibson, John, an English sculptor; born near Conway, in Wales, July 19, 1790. The patronage of W. Roscoe assisted him to go to Rome, where he was cordially received by Canova. On the death of Canova in 1822 Gibson entered the studio of Thorwaldsen. In 1836 he was made a Royal Academician; but to the end of his life he continued to make Rome his chief place of residence. He died in Rome, Jan. 26, 1866.

Gibson, William Hamilton, an American artist and author; born in Sandy Hook, Conn., Oct. 5, 1850; died in Washington, Conn., July 16, 1896.

Giddings, Franklin Henry, an American educator; born in Sherman, Conn., March 23, 1855; was graduated at Union College in 1877; accepted the chair of sociology in Columbia University in 1894.

Giddings, Joshua Reed, an American statesman; born in Athens, Pa., Oct. 6, 1795; admitted to the Ohio bar in 1820; elected a member of its Legislature in 1826, and of Congress in 1838, where he was prominent as an opponent of slavery. In 1861 he was appointed consul-general to British North America. He died in Montreal, May 27, 1864.

Gideon, a judge of Israel. During his youth Israel was sunk in idolatry and sloth, and was oppressed by the plundering incursions of the Amalekites and Midianites. Confident in the assurance of supernatural direction, he mustered the people, reduced the unwieldy host to a handful of resolute men, fell suddenly upon the enemy in the neighborhood of Mount Gilboa, and routed them with great slaughter.

Giers, Nicholas Carlovitch de, a Russian statesman; born May 21, 1820. After holding various posts, he became minister of foreign affairs in 1882. His policy in general is understood to be of peaceful tendencies, and in particular opposed to Panslavistic ideas of development. In Central Asia, however, M. de Giers continued the policy of advance, and in 1885 the Russian occupation of positions with-the Afghan frontier nearly brought bout a war with Great Britain. He ied in St. Petersburg, Jan. 26, 1895.

Giesebrecht, Wilhelm von, a erman historian; born in Berlin, arch 5, 1815; became Professor of istory at Konigsberg in 1857, and in 862 at Munich; died Dec. 18, 1889.

Gieseler, Johann Karl Ludwig, German historian; born in Peters-agen, near Minden, March 3, 1793; ied in Gottingen, July 8, 1854.

Giffen, Robert, Sir, an English ditor and economist; born in Strat-aven, Scotland, in 1837. He is the uthor of a number of reports, papers, nd essays which have given him a igh rank.

Gifford, Adam, a Scotch philan-hropist; born in Edinburgh in 1820; tudied at the university there, and as called to the Scotch bar in 1849. e died in Granton, near Edinburgh, an. 20, 1887. By his will he left 125,000 to the University of Edin-urgh, $100,000 each to Glasgow and berdeen, and $75,000 to St. Andrews, o endow lectureships in natural theol-gy, subject to no dogmatic tests what-oever.

Gifford, Robert Swain, an Amer-can artist; born in Naushon Island, ass., Dec. 23, 1840; received a com-on school education; studied with lbert Van Beest in Rotterdam, Hol-and; traveled through California and regon in 1869, and in Europe and orth America in 1870–1871.

Gifford, Sanford Robinson, an merican artist; born in Greenfield, . Y., July 10, 1823; died in New ork city, Aug. 29, 1880.

Gihon, Albert Leary, an Amer-can sanitarian; born in Philadelphia, a., Sept. 28, 1833; was graduated at he Philadelphia High School in 1850; rofessor of Chemistry and Toxicol-gy in the Philadelphia College of edicine and Surgery in 1853–1854; ppointed assistant surgeon in the nited States navy in 1855; took part n the attack and capture of the bar-ier forts, near Canton, China, in 856; and served throughout the Civil ar. He was promoted medical direc-or U. S. N., May 1, 1895, and was etired with the rank of commodore, ept. 28, following. He died in New ork city, Nov. 17, 1901.

Gila, Rio, a river of North America, an affluent of the Colorado of the West, origin in New Mexico; length, 450 miles. Its upper course is through mountains, with many deep and precipitous canons; further S. it flows through an open and comparatively level country, the valley being productive when irrigated.

Gila Monster, a poisonous lizard also called Sonoran heloderm. It is one of the largest lizards of North America, and is found in the sandy deserts of New Mexico, Arizona, and Texas. Its scales are brilliant orange and jet black. It has grooved teeth and highly developed salivary glands at their bases. Its bite is rapidly fatal to small mammals and birds, and very injurious, though seldom fatal, to man. The heloderms are the only lizards ascertained to be venomous.

Gilbert, Charles Henry, an American educator; born in Rockford, Ill., Dec. 5, 1859; was graduated at Butler University, Ind., in 1879; became Professor of Zoölogy in the Leland Stanford University in 1891.

Gilbert, Mrs. George H., an English actress; born in Rochdale, England, Oct. 21, 1821. She visited the United States in 1846, and in 1849 made her home here. For many years before her retirement she was a member of the Daly company.

Gilbert, Sir Humphrey, an English navigator; born in Dartmouth, Devonshire, in 1539. In 1578 he obtained a royal patent to "discover and occupy remote heathen lands not actually possessed of any Christian prince or people." With his younger half-brother, Sir Walter Raleigh, he sailed in quest of the "Unknown Goal"; but his expedition in 1578–1579 was frustrated by internal dissensions, tempests, and a smart brush with the Spaniards. He set sail from Plymouth in June, 1583, and in August landed in Newfoundland, of which he took formal possession for Queen Elizabeth. But, sailing S. he lost off Cape Breton the largest of the three vessels left out of five, so was forced to start for home, but was shipwrecked and drowned Sept. 9, 1583.

Gilbert, Sir John, an English painter; born in Blackheath, near London, in 1817. In 1852 he was elected an associate, in 1853 a member, in 1871 the president of the Society of Painters in Water-colors, receiving soon after the honor of knighthood. He also became, in 1876, a Chevalier of the Legion of Honor. He died in Villers-sur-Mea, France, Oct. 6, 1897.

Gilbert, John Gibbs, an American comedian; born in Boston, Mass., Feb. 27, 1817. His professional tours, both in the United States and Europe, were eminently successful. He died in Boston, Mass., June 17, 1889.

Gilbert, John Thomas, an Irish historian; born in Dublin, Ireland, 1829. To his enterprise and energy is largely due the revival of interest in Celtic studies.

Gilbert, Rufus Henry, an American inventor; born in Guilford, N. Y., Jan. 26, 1832; was graduated at the New York College of Physicians and Surgeons; served as surgeon in the Union army in the Civil War; and was appointed superintendent and medical director of the United States army hospitals. Owing to the failure of his health after the war he abandoned his profession and engaged in the railroad business, making a special study of the needs of rapid transit in New York city. The result was the erection of the first elevated railroad in that city, the motive power being an endless wire cable. From this beginning the elevated system of today was gradually developed. He died in New York city, July 10, 1885.

Gilbert Islands, a group on the S. W. coast of the archipelago of Tierra del Fuego, with a good harbor in Doris Cove. Another cluster of the same name, comprising 15 coral islands, forms part of the Mulgrave Archipelago in the Pacific. The chief products are the cocoanut and the pandanus.

Gilboa, a chain of hills between 500 and 600 feet high, overhanging the site of the ancient city of Jezreel, and rising between the fertile plain of Esdraelon on the W. and the green valley of the Jordan on the E. It is memorable as the scene of the defeat and death of King Saul and his three sons at the hands of the Philistines.

Gilchrist, Alexander, an English author; born in Newington Green in 1828; died in Chelsea, Nov. 30, 1861. Wrote a "Life of Blake," which he left incomplete.

Gilchrist, Anne, an English author; born in London in 1828. In 1851 she married Alexander Gilchrist. On her husband's death she undertook the completion of his "Life of Blake" (1863), to the second edition of which (1880) is appended a memoir of Alexander Gilchrist. She spent three years in the United States in 1876-1879, when she wrote for "Blackwood's" "Glimpses of a New England Village." In 1885, only a few months before her death that year, appeared her last essay, "A Confession of Faith."

Gilding, the art of applying and permanently attaching gold leaf or gold dust to surfaces of wood, stone, metals, etc. The Egyptian monuments present numerous traces of the existence of the art in ancient Egypt. The process seems to have been the same as that now used.

Giles, Chauncey, an American author; born in Charlemont, Mass., May 11, 1813; entered the Swedenborgian Church in 1853; and held pastorates in Cincinnati, New York, and Philadelphia. He died in Philadelphia, Nov. 6, 1893.

Gildersleeve, Basil Lanneau, an American classical scholar; born in Charleston, S. C., Oct. 23, 1831; graduated at Princeton in 1849, and studied in Germany for several years. He was Professor of Greek and Latin at the University of Virginia from 1856 to 1876, when he was appointed Professor of Greek at Johns Hopkins University. He is the founder and editor of the "American Journal of Philology."

Gilfillan, George, a Scotch author; born in Comrie, Perthshire, Jan. 30, 1813; died in Arnhalt, Aug. 13, 1878.

Gilgal, an ancient city near the Jordan, where the Israelites passed the river into Caanan, where they were circumcised and held the first Passover after leaving the desert (Joshua iv: 19). Here rested the tabernacle, till removed to Shiloh; here Samuel held court as judge of Israel, and here Saul was crowned.

Gills, the branchiæ of fishes; a double row of long, compressed, slender-pointed processes, extending, like the teeth of a comb, from the convex side of a branchial arch, and supported by a delicate membrane. Gills may be free or fixed.

Gill, David, a Scotch astronomer; born in Aberdeen, June 12, 1843; educated at Marischal College. He was in charge of Lindsay's expedition to Mauritius in 1874 to observe the transit of Venus and the opposition of Juno, by means of the heliometer, for the determination of the solar parallax. In 1877 he was in charge of the expedition to Ascension to observe the opposition of Mars for parallax; and in 1879 appointed director of the Cape Observatory. He was a delegate to the International Astrophotographic Congress, and a member of its permanent committee.

Gill, Henry Z., an American physician; born in Richboro, Pa., Oct. 6, 1831; was graduated at the Jefferson Medical College, Philadelphia, in 1857; was a surgeon in the Union army during the Civil War; and was Professor of Chemical and Operative Surgery in Wooster University in 1883–1886; removed to Kansas in 1886.

Gill, Theodore Nicholas, an American educator; born in New York city, March 21, 1837; received a common school education; studied natural history; and became Professor of Zoölogy in Columbia University in 1884.

Gillette, William, an American playwright; born in Hartford, Conn., July 24, 1853. He is the author of several successful plays, in many of which he has assumed the leading parts.

Gillies, John, a Scotch historian; born in Brechin, Forfarshire, Jan. 18, 1747; died in Clapham, Feb. 15, 1836.

Gillis, James Melvin, an American astronomer; born in Georgetown, D. C., Sept. 6, 1811; entered the navy in 1827, soon obtained leave of absence and was graduated at the University of Virginia, and then spent six months in Paris. He was in charge of the observation of occultations and transit observations made in connection with the Wilkes exploring expedition, Gillis making the observations at the Washington end at a little observatory on Capitol Hill. He had charge of the United States astronomical expedition to the Southern hemisphere, and in 1861 was appointed superintendent of the national observatory at Washington, D. C. He died in Washington, D. C., Feb. 9, 1865.

Gillman, Henry, an American botanist; born in Kinsale, Ireland, Nov. 16, 1833; settled in Detroit, Mich., in 1850; was United States consul at Jerusalem in 1886–1891. During his consulate he so strongly opposed the Turkish government in its expulsion of Jews from Palestine that several European countries supported him, and the exclusion laws were modified.

Gillmore, Quincy Adams, an American military officer; born in Black River, Lorain co., O., Feb. 28, 1825; graduated at West Point in 1849. He was promoted captain in 1861, and Brigadier-General of volunteers early in 1862. He displayed skill as an engineer by the capture of Fort Pulaski in April, 1862, and was appointed commander of the Department of the South in June, 1863. He made a successful attack on Morris Island in July, 1863, began to bombard Fort Sumter and Charleston in August, and took Fort Wagner in September; Fort Sumter was reduced to a ruinous condition, but its garrison continued to hold it till Feb. 17, 1865. General Gillmore commanded the 10th Corps near Richmond in 1864, and was brevetted Major-General U. S. A., in 1865. He died in Brooklyn, N. Y., April 7, 1888.

Gill Net, a net suspended in a stream, having meshes which allow the heads of the fish to pass, and which catch in the gills to prevent the fish from detaching itself.

Gilman, Daniel Coit, an American educator; born in Norwich, Conn., July 6, 1831; was graduated at Yale College in 1852; Professor of Physical and Political Geography in Yale in 1856–1872; president of the University of California in 1872–1875. When Johns Hopkins University was founded in Baltimore, Md., in 1875, he was elected its first president and served in that capacity till 1901. In 1896–1897 he was a member of the commission to settle the boundary line between Venezuela and British Guiana, and in the latter year also served on the commission to draft a new charter for

Baltimore. On Jan. 29, 1902, he was elected president of the National University founded by Andrew Carnegie.

Gilman, Nicholas Paine, educator; born in Quincy, Ill., Dec. 21, 1849; was graduated at Harvard Divinity School in 1871; editor of the Boston "Literary World" in 1888–1895; then became Professor of Sociology and Ethics in the Meadville Theological School.

Gilm zu Rosenegg, Hermann von, a German poet; born in Innsbruck, Nov. 1, 1812. His poems did much to maintain among the Tyrolese the spirit that prompted their uprising for independence in 1809. He died in Linz, May 31, 1864.

Gilolo, or **Jilolo,** an island of the Molucca group in the Indian Archipelago.

Gilthead, a fish having golden colored eyebrows, whence its English name. The back is silvery gray shaded with blue, the belly polished steel-blue, with golden bands along the sides. It is abundant in the Mediterranean.

Gimp, silk twist interlaced with wire or a coarse cord. It is now principally used in upholstery, though it has at times been fashionable for trimming wearing apparel.

Gin, a compounded spirit, prepared either by redistilling plain spirit with juniper berries, coriander seeds, angelica root, etc., or by adding various essential oils to rectified spirit. Also, a machine for separating cotton fiber from the seeds.

Ginevra, a young Italian bride, who hid in a trunk with a spring lock. The lid fell on her, and she was never discovered till the body had become a skeleton.

Gingal, an East Indian breech-loading firearm, carrying a ball from four to eight ounces. It is fired from a rest.

Ginger, in botany, common or narrow-leaved ginger. It is a native of India, but is cultivated in most tropical countries. There is a broad-leaved ginger, also a native of India. It is used externally for cataplasms and fomentations, but is not eaten.

In ordinary language, the dry, wrinkled rhizomes of the ginger-plant. The pieces, or as they are called races, are usually from 2 to 4 inches long, branched, flat, and of a pale buff color. Ginger is known in commerce under two forms, coated and uncoated or scraped, the latter having been deprived of its epidermis when in the green state, and sold as white ginger. The chief varieties imported into the United States are Jamaica, Cochin, Bengal, Japan, and African. Ginger is an agreeable aromatic, and a valuable stomachic; but is more largely used as a condiment than as a medicine. Preserved ginger, so largely imported from China in jars, consists of the young rhizomes boiled in syrup. Ground ginger is frequently adulterated, the chief adulterants being sago flour, wheat flour, ground rice, and arrowroot. These are added, not only to increase the weight but to whiten a dark-colored variety, which is then sold as a first-class ginger.

Gingko, the Japanese name of a coniferous tree of the yew alliance, with very characteristic leaves, in form and variation recalling the leaflets of the maiden-hair ferns. The yellow, drupe-like seeds reach the size of a walnut, and are largely eaten throughout China and Japan. The Japanese esteemed the tree as sacred, and planted it round their temples.

Ginsburg, Christian D., a Polish author; born in Warsaw, in 1830. He was one of the scholars engaged on the revised version of the Old Testament.

Ginseng (Chinese Gensen, "that which resembles a man"), a root used in China as a medicine, and exported from North America to China to the amount of about 500,000 pounds annually. Ordinary ginseng is prepared by simply drying the root over a charcoal fire; the red or clarified ginseng is steamed in earthenware vessels with holes. The root is mucilaginous, sweetish, also slightly bitter and aromatic.

Gioverti, Vincenzo, an Italian writer; born in Turin, April 5, 1801; died in Paris Oct. 26, 1852.

Gipsies (from Egyptians, the name by which they were called in the English statutes), a wandering nation whose physical characteristics, language, and customs differ much from those of European nations. Gipsies are remarkable for the yellow brown, or rather olive color, of their skin; the jet-black of their hair and eyes, the extreme whiteness of their teeth, and for the symmetry of their limbs, which distinguishes even the men, whose general appearance, however, is repulsive and shy. The gipsies have much elasticity and quickness; they are seldom of a tall or powerful frame; their physiognomy denotes carelessness and levity. They rarely settle permanently anywhere. Wherever the climate is mild enough they are found living in forests and waste places in companies. Their common shelter is a tent. Gipsies first appeared in Europe about five hundred years ago. At first they were well received, but afterward shunned and prosecuted as outlaws. Many were executed in Scotland and England. Nevertheless, they mingled with the natives and many well known families have gipsy blood. Considerable numbers have made their way to the United States.

GIRAFFE.

Giraffe, the camelopard. It has an affinity to the camel; but its resemblance to the leopard, which is only in its color and spots, is an analogy and no more. It has two small frontal horns and one central horn. The neck is very long, but has only the normal number of cervical vertebræ. The tongue is long and prehensile, and is used for stripping leaves off trees. The forelegs are very long, making the animal stand 15 to 18 feet high. It lives in small herds, and gallops in a ludicrously clumsy manner. The animal is inoffensive when unmolested, but will try to kick its assailant if it be attacked. Its flesh is good; when old it becomes coarse; the hide makes excellent leather. It is found in Nubia, Abyssinia, and the Cape of Good Hope; probably also in every part of the intermediate region. Species of giraffe have been found in Miocene strata in India, Greece, and France.

Girard, Stephen, an American philanthropist; was born near Bordeaux, France, May 24, 1750. In 1769 he settled as a trader in Philadelphia, where he established the Second National Bank, and advanced several millions to the United States treasury during the War of 1812. In the yellow fever epidemic in 1793 he nursed many of the sick in the hospitals; and in public matters his generosity was remarkable. Among other bequests he left $2,000,000 for the erection and maintenance in Philadelphia of a college for male white orphans. He died in Philadelphia, Pa., Dec. 26, 1831.

Girard College, an institution in Philadelphia, Pa., for the education of poor white orphan boys; founded under the will of Stephen Girard, and opened Jan. 1, 1848. By a provision in the will no ecclesiastic, missionary, or minister of any sect whatever is to have any connection with the college.

Girardin, Emile de, a French politician; born in Paris, June 22, 1806, and educated there. In 1836 he founded the "Presse," an Orleanist journal with Conservative leanings. Its rivals accused it of being subsidized by the government, and one of the unfortunate results of the quarrels thus fastened on Girardin was his duel with Armand Carrel, editor of the "National" in which the latter fell. In 1874, he founded the "France," and both in its pages and in the "Petit Journal" supported the republic. He wrote a few pieces for the stage; his political ideas he gave to the world in a host of brochures. He died in Paris, April 27, 1881.

Girasol, a precious stone, exhibiting in strong lights a peculiar and beautiful reflection of bright red or yellow light, which seems to come from the interior of the stone.

Girdler, an American longicorn beetle, which deposits its eggs in twigs of hickory and then girdles the twigs, thus killing them and rendering them fit food for their larvæ.

Girgashites, a tribe of the ancient Canaanites.

Girnar, a sacred mountain in India. It is a bare and black rock of granite rising to the height of 3,500 feet above the sea; and, as a holy place of Jainism, is covered with ruined temples. One group contains 16 temples, nearly 3,000 feet above the sea.

Girodet, Anne Louis, a French painter; born in Montargis, Jan. 5, 1767; was a pupil of David. He painted "Napoleon Receiving the Keys of Vienna"; and "St. Louis in Egypt," which was his last great work. He was a member of the Academy of Painting, and of the Institute. He died in Paris, Dec. 19, 1824.

Girondist, or **Girondin,** the name of a great political party in France; one of the most powerful factors in the earlier part of the first French Revolution. When the Legislative Assembly met in 1791, it was found to contain representatives of the upper, the middle, and the lower classes. The Girondists were the party of the middle classes, and were republican in sentiment. Their followers were the burgess class, the professionals, and the smaller agriculturists. In 1791 they were the most powerful party in the Assembly, and for a time shaped the policy of their country. When conservative Europe, in the interests of monarchy, threatened France with invasion, it was the Girondists who, in April, 1792, declared war, the Jacobins deprecating hostilities, as fearing the result. To overcome their monarchic rivals, the Girondists coquetted with the last-named party; and found that they had gained, not a servant, but a cruel and exacting master. The quarrel between the two arose after the massacres perpetrated in August and September, 1792, and the extreme revolutionists ultimately prevailing, an armed mob on May 31, 1793, assailed the Convention, and demanded the imprisonment of 29 Girondist deputies. These were arrested on June 2, and 21 of them were guillotined on Oct. 31. Others were subsequently put to death; a few escaping, reappeared in the Convention after the fall of Robespierre.

Girton College, a noted college for women in England, instituted at Hitchin in 1869, but removed to Girton, near Cambridge, in 1873.

Giseke, Robert, a German dramatist; born in Marienwerder, Jan. 15, 1827. Early an accomplished theologian and an authority on philosophy and history, his prospects were destroyed by his political utterances in 1848, and he was driven to journalism for a livelihood. After some years he began to write novels, but his original and striking plays gave him his greatest renown. He died in Leubus, Dec. 12, 1890.

Gisors, a town in France, 43 miles N. W. of Paris. Its double-aisled church, whose choir dates from the 13th century, has a splendid flamboyant portal; and the octagonal donjon of the ruined castle was built by Henry I. of England. Here Richard I. defeated the French in 1198; his watchword, "Dieu et mon Droit," has ever since been the motto of the royal arms of England.

Gissing, George, an English novelist; born in Wakefield in 1857. He has made a remarkable study of the London masses.

Gitschin, a town of Bohemia, 60 miles N. E. of Prague. Gitschin was once the capital of the duchy of Friedland, and here Wallenstein built a splendid palace in 1630. On June 29, 1866, the Austrians were severely defeated here by the Prussians.

Gittith, an instrument of music among the ancient Hebrews. Buxtory calls it a stringed instrument, and derives the name from Gath, a city of the Philistines, whence King David, on his return, brought it to Jerusalem.

Giulio Romano, properly Giulio Pippi de' Giannuzzi, an Italian artist; born in Rome about 1492; assisted Raphael in the execution of several of his finest works. Giulio died in Mantua Nov. 1, 1546.

Giurgevo, a town of Roumania, on the Danube. It imports iron and textile goods, coal, and spirits, and exports corn, salt, and petroleum. Since 1771 the town has played an important part in all the wars between the Turks and the Russians.

Glacial Drift, in geology, transported material, in the carrying or deposition of which ice, in the form either of land ice or of icebergs, took the leading part.

Glacial Period, a period or epoch during which ice largely prevailed, the climate, in what are now temperate latitudes, being polar. It commenced during the Newer Pliocene, and terminated before the close of the Post-Pliocene age.

Glaciers. The summits and sides of mountains above the limit of perpetual snow are covered with a crust which is harder than common snow, yet not like common ice. More ice is formed on the sides of mountains than on their summits, but this does not constitute the glaciers properly so called. The glaciers are vast fields of ice extending from the declivities of the mountains down into the valleys below the snow line, and bearing a considerable resemblance to a frozen torrent. They take their origin in the higher valleys above the limit of perpetual snow, where they are formed by the congelation of large masses of snow in that particular condition called by French writers neve, by German authors firn. The ice of which glaciers are formed is different from that produced by the freezing of still water, and is composed of numerous thin layers filled with countless bubbles of air. It is likewise both more brittle and less transparent than common ice.

The glaciers continually move downward into the valleys, and not infrequently reach the borders of cultivation, sometimes even descending so far as to sweep away villages in their course. The rate at which a glacier moves varies from 18 to 24 inches in 24 hours. At its lower end it is generally very steep and inaccessible, the nature of the ground in some cases producing a solid cascade of ice of 1,000 feet in height. In the middle part of its course it is more level but gradually becomes steeper in the ascent toward its source. The appearance presented by a glacier in the middle part of its course is that of a frozen stream with an undulating surface more or less broken up by fissures or crevasses of varying length and width. As it descends it experiences a gradual diminution from the action of the sun and rain and likewise from the heat of the earth in the valley which forms its bed. This last circumstance produces a phenomenon which is universally attendant on glaciers — the issue of a stream of ice-cold turbid water from its lower extremity.

Glaciers are found in Greenland, Alaska, and other parts of North America; in the Himalaya, Hindu Kush, Karakorum, and other mountains of Asia; in Africa, high up on Kilima-Njaro; in the Southern Alps of New Zealand; in the Andes of South America, and in Switzerland and Scandinavia. The glaciers of Greenland are usually regarded as constituting a type distinct from the Alpine and the Norwegian. They are simply tongues of ice projected down the ice fiords to the coast from the immense expanse of ice which covers the whole interior of the country, and they travel at a much quicker rate than those of Europe. The two largest are the Jacobshavn glacier in Disko bay, which is 13 miles long and over 1½ miles in breadth at its end; and the Humboldt glacier at Smith sound, which is over 60 miles broad. Several of the many glaciers of Alaska are of immense size; notably the Malespina glacier near Mount St. Elias, "a plateau of ice having an area of between 500 and 600 square miles," and the Muir glacier on Glacier Bay, to the S. E. of the former with an area of about 350 square miles. Icebergs, as is well known, are simply huge pieces detached from glaciers that flow into the sea in the Arctic and Antarctic regions.

Glacis, in fortifications, the superior slope of the rampart of the covered way, or, where the rampart does not exist, the declivity immediately in front of the ditch of a work, forming a gentle slope toward the country, and protecting the reventment of the escarp from the fire of an enemy.

Gladden, Washington, an American author; born in Pottsgrove, Pa., Feb. 11, 1836; was graduated at Williams College in 1859; ordained in the Congregational Church, and became pastor of the First Congregational Church in Columbus, O., in 1882. He is widely known as a writer on social reforms.

Gladiator, one of the class of men whose profession was to fight in public for the entertainment of the people. They were armed with deadly weapons and usually fought in pairs. The numbers of these men were principally recruited from prisoners of war, or refractory slaves sold by their masters to the lanista, or trainer. Malefactors also were occasionally forced into fighting as gladiators, and occasionally Roman citizens offered themselves voluntarily for hire, and to such the specific term "auctorati" was applied, their pay being called "auctoramentum." Under the more worthless and dissolute emperors, equites, priests and senators did not scruple to contend in the arena, in the hope of attracting the attention and gaining the favor of the prince; and even high-born women were found who consented to pander to the appetite for novelty, by fighting with each other or with dwarfs. Gladiators were divided into classes according to the manner in which they were equipped, and were in many cases named from the nation whose characteristic arms they bore. The representatives of different nations were frequently matched against each other, and the comparative efficiency of their weapons, offensive and defensive, was thus put to the test. If one of the combatants was wounded so as to be unable to continue the fight, the life or death of the wounded man, who held up his finger in token of submission, depended upon the pleasure of the president, who usually, as a matter of courtesy, referred it to the spectators, who signified their decision by raising or depressing their thumbs, according as they wished him to be killed or saved.

Gladiolus, a genus of plants with beautiful spikes of flowers, sword-shaped leaves and corms or bulbous rhizomes. The hardy forms are well adapted to the mixed border, wild garden or shrubbery in dry and sunny situations.

Gladstone, William Ewart, a British statesman; born in Liverpool Dec. 29, 1809, the birth year of Tennyson and several other eminent men. He was of Scottish descent on both sides. His father, John Gladstone, a wealthy Liverpool merchant, afterward a member of Parliament and a baronet, was a native of Leith, and belonged to a Lanarkshire family that can be traced in a direct line for centuries; while his mother, Anne Robertson, belonged to the North of Scotland, her father having at one time been provost of Dingwall. His political career began in 1833, and up to the time of his death in 1898, he held a prominent, and often leading place in public affairs. He brought about, even if he did not always carry out the gradual enfranchisement of the common people of England, and he almost succeeded in gaining home-rule for Ireland. He was lacking in foresight as he showed in his public assertion that the United States could not subdue the Confederacy, but he always meant well, and his mistakes were never of the heart. He died May 19, 1898, at his home, Hawarden Castle.

Mr. Gladstone wrote extensively and on a variety of topics, and his books, including collections of speeches, magazine articles, etc., are numerous.

Glammis, a village of Scotland, five miles S. W. of Forfar. Near it is Glammis Castle, in which is still shown the chamber in which Malcolm II. was assassinated in 1034. It was one of the castles of Macbeth, and gave him his hereditary title of Thane of Glammis.

Gland, a term at first vaguely applied to any smooth, round viscus, but which is now limited to such of these as secrete — i. e., separate by a process of cell growth, certain constituents of the blood which are afterward poured out from the gland by means of a duct.

Lymphatic glands are bodies resembling glands in form, but not possessing ducts for secretion, so that their products must be conveyed to them by lymphatic or sanguiferous vessels. Examples, the spleen, the thyroid body, the thymus gland, the suprarenal capsules, the pituitary body, the follicular glands at the root of the tongue and the lymphatic glands.

Glanders, a disease among horses, indicated by a discharge of purulent matter from one or both nostrils, with a hard enlargement of the submaxillary glands. In acute glanders the discharge, by its copiousness, impedes respiration and ultimately produces suffocation. The disease is highly infectious, and may even be communicated to man by the purulent matter coming in contact with any part where the skin is broken. The disease is rarely if ever cured.

Glarus, a town and capital of the Swiss canton of Glarus; 43 miles S. E. of Zurich. It was founded by an Irish monk, Fridolin, in the end of the 5th century. Zwingli was pastor here from 1506 to 1516. Glarus, having been peopled by German settlers, passed after various changes into the possession of the dukes of Austria, but ultimately secured its independence by the victories of Nafels in 1352 and 1388. In 1450 it joined the Swiss Confederation.

Glasgow, the largest city in Scotland, and the second largest in the United Kingdom of Great Britain and Ireland, is situated in the countries of Lanark and Renfrew, on both banks of the Clyde. Though having some unlovely features, Glasgow as a whole is excelled by few cities in the kingdom in architectural beauty and general amenity of appearance. It possesses few squares worth mention, the chief being George Square, in the heart of the city and Cathedral Square toward the N. E. The city also possesses botanic gardens, with extensive ranges of hothouses, greenhouses, "crystal palace," etc.

Preëminent among edifices stands the Cathedral, Glasgow's only ancient building, in the N. E. quarter of the city, on the edge of a ravine separating it from the Necropolis (the chief public cemetery). It is a large Gothic edifice in the early pointed style, with tower and spire rising from the center, but without transepts; length of interior, 319 feet; width, 63 feet; height of nave, 90 feet; of choir, 85 feet; spire, 225 feet. It is especially distinguished for the beauty of its crypt (or under-church), which is one of the most beautiful in Great Britain. The windows have been filled by private munificence with painted glass on a uniform plan, those in the nave and choir being by Munich artists, those in the crypt, chapter house, and lady chapel, by British artists. The cathedral as it at present stands is supposed to have been begun before 1197, and completed within the 15th century.

The manufacturing industries of Glasgow, including also those of the surrounding and dependent districts, are unequaled for variety by any manufacturing town in the kingdom, with the exception, perhaps, of London. Among the older industries of importance are those connected with cotton, linen, and wool, including spinning and weaving, dyeing and bleaching, calico printing, and Turkey-red dyeing in particular. But the Glasgow of today is most largely dependent on iron and coal, and the importance of its textile industries is relatively less than formerly. It is the leading market for the whole iron production of Scotland and there are blast furnaces and collieries within the city boundaries. The manufacture of malleable iron and steel, and of machinery and metal goods of all descriptions, is immense. The most important industry is shipbuilding and the connected trades, the Clyde, which was the birthplace of steam navigation in Europe, having ever since been closely associated with the growth and development of steam shipbuilding and marine engineering. Some 300,000 tons of shipping are usually built yearly. Locomotive engines constitute another great industry. There are also extensive chemical works, potteries, glass works, brick works, breweries, distilleries, tanneries, tobacco works, confectionery works, carpet works, printing, publishing, and lithographic works, and a multitude of other industries of greater or less importance.

The commerce of Glasgow is commensurate in extent with the importance of its manufactures, and is closely associated with these. The consigning trade, that is, the consignment by manufacturers of their own goods to foreign markets for sale, has consequently here acquired dimensions unusual in English manufacturing towns of the first class, and many wealthy mercantile houses have grown up in the East Indian, American, and other branches of foreign trade. The river itself, the chief highway of this commerce, from being a shallow stream, has by dredging been made navigable for large vessels. The progress of Glasgow will be seen from the following figures of population: 1610, 7,644; 1660, 14,678; 1708, 12,766; 1740, 17,034; 1763, 28,300; 1785, 45,889; 1801, 77,385; 1811, 100,749; 1841, 255,650; 1871, 477,732; 1881, 511,415; 1891, 565,714. Before the end of 1891 the boundaries were extended, and the population thus increased to 656,946; in 1901 it was 760,406, or with the adjoining suburbs, over 900,000.

Glasgow University, a corporate body founded by a bull of Pope Nicholas V., dated Jan. 7, 1450–1451, with the power of creating masters and doctors, who, together with the readers and students, were to enjoy the same privileges and immunities with the University of Bologna.

The University of Glasgow comprises five faculties, namely, arts, science, medicine, law, and theology, the faculty of science having been recently added. The oldest chairs are those of moral philosophy, 1577; natural philosophy, 1577; logic and rhetoric, 1577; Greek, 1581; divinity, 1630; Latin, previous to 1637; mathematics, revived 1691. In the first 20 years of the 18th century six professorships were either originally founded or revived, namely, Latin, Oriental languages, civil law, medicine, Church history, anatomy; astronomy was added in 1760. The remaining 18 professorships were founded in the 19th century. The university was reconstituted by the Scottish University Act, 1858, and a similar revolution was effected under the act of 1889.

Glass, a hard, brittle, transparent substance, formed by fusing together mixtures of the silicates of potash, soda, lime, magnesia, alumina, and lead in various proportions, according to the quality or kind of glass required.

Of the origin of glass manufacture we cannot speak with certainty. Pliny states that the ancient Phœnicians discovered by a happy accident how to make it. He relates that certain Phœnician merchants preparing a meal upon the seashore set their cooking vessel on a mass of natron (subcarbonate of soda) and the union of the sand and alkali, when subjected to the fire, resulted in vitrification that drew the men's attention and led to subsequent efforts at imitation. According to Egyptologists the Egyptians made sham jewels of glass at least 5,000 or 6,000 B. C. In some of the most ancient tombs scarabs of glass have been found imitating rubies, emeralds, sapphires, and other precious stones, and the glass beads found broadcast in three parts of the globe were quite possibly passed off by traders on confiding barbarians as jewels of great price. As a medium of trade, beads are evidently of great antiquity. Those known as aggry have been attributed to both Egyptian and Phœnician sources. The beads vary greatly in color and pattern and some of them show fine workmanship and marked beauty. During the period when Egypt was part of the Roman empire much glass was produced in the Nile valley.

It is uncertain whether glass was made in England before the 16th century, as that mentioned may have been imported from Flanders or Venice. In 644 Benedict Biscop introduced makers of glass windows into Northumbria; but window glass was not in general use for windows till the 15th century. Attempts were made to establish glass works at Jamestown, Va., in 1608–1622; at Salem, Mass., in 1639–1640; in New York city before 1664; and in Pennsylvania before 1683. Subsequently works were established in 1780 at Temple, N. H.; in 1792 at Boston; and in 1797 at Pittsburg. Plate glass was first made there in 1853, and it is also made at Baltimore and New York. Pressed glass was invented in the United States. Glass making is now a most flourishing American industry.

Glass Blowing, a mode of manufacturing various articles by taking a mass of viscid glass from the melting pot on the end of the blowing tube, and then inflating the mass by blowing through the tube, rolling on the marver, and exposing it at the furnace opening where its contained air is expanded and itself enlarged.

Glassites, a religious sect which sprang up in Scotland about 1819, and was so called after its founder, the Rev. John Glass. He was opposed to all national establishments for the support of religion, and advocated a system of independent Church government. The leading tenets of the Glassites relate to the efficacy of the atonement and the nature of faith. They hold that "the bare death of Christ, without a deed or thought on the part of man, is sufficient to present the chief of sinners spotless before God"; and that "faith is no more than a simple assent to the divine testimony, passively received by the understanding." They also observed certain peculiar practices, supposed by them to have been prevalent among the primitive Christians; such as weekly sacraments, love-feasts, washing each other's feet, the kiss of charity, the use of lots; and in general, they attempted to carry out literally, the rules of Scripture.

Glass Painting, the art of producing pictures on glass with vitrifiable colors, in contradistinction to the use of colored glass, in which the color forms part of the composition of the glass itself. Originally there was but one method of making ornamental glass windows, which was by the latter process; the pieces of stained or colored glass were cut to the desired shape, and let into the grooves of finely made leaden frames which formed the pattern in outline, so that the pictures resembled tables of mosaic work, on which there was no attempt at shading or modification of the tone. It was not till the 13th century that the mosaic patterns gave way to elaborate designs, not only in beautiful arabesque and other styles of decorative art, but even in pictorial composition. In all of these the figures, with the exception of the faces and hands, were made up of pieces of colored glass combined with great skill and taste. The faces and hands were painted in enamel colors, and burned in. Shading, properly so called, and half tints, are not attempted. Gradually the art of shading by removing certain portions of the colored surface and other improvements were effected and the 15th century may be called the culminating point in the history of the first period of the art. The present period of glass painting began contemporaneously with the revival of Gothic architecture in the 19th century.

Glass Snake, a lizard. From the absence of feet, they look like serpents. The name glass snake is supposed to allude to the brittleness of their tail.

Glastonbury, a town of Somersetshire, England, 25 miles S. W. of Bath. It was the seat of the most magnificent and wealthy abbey in England, the last abbot of which was hanged for refusing to surrender it to Henry VIII. Its ruins are still extensive.

Glatz, a town of the province of Silesia, Prussia, on the left bank of the Neisse, 52 miles S. S. W. of Breslau. During the Thirty Years' and Seven Years' War, Glatz was frequently besieged and taken, and therefore has some historical interest.

Glauber, Johann Rudolph, a German chemist; born in Karlstadt, in Franconia, in 1603. In 1648 he discovered hydrochloric acid while experimenting with oil of vitriol and common salt; he was probably the first to procure nitric acid; and his name has been transmitted in Glauber's salt, which he likewise discovered. He died in Amsterdam in 1668.

Glauber's Salt, sulphate of sodium, so called because of the importance attached to its chemical and medicinal properties by Glauber. It forms large colorless monoclinic prisms which effloresce on exposure to the air. It is soluble in water, and when heated melts in its water of crystallization. It is found in many localities, both dissolved in the water of mineral springs and of salt lakes, round which it effloresces.

Glaucoma, an opacity of the vitreous humor of the eye, characterized by a bluish tint seen from without, and the absence of the peculiar characters of cataract, which, in some respects, it resembles as regards the gradual obscuration of vision. It is an almost incurable disease.

Glazier Lake, a body of water in Minnesota, S. of Lake Itasca, into which it empties through a swift and permanent stream about six feet wide; named for Capt. Willard Glazier, who claimed for it a geographical importance as the true source of the Mississippi. Lake Glazier is 1½ miles in greatest diameter; and has an area of 255 acres. It is estimated to be 1,582 feet above the Atlantic, and 3,184 miles from the Gulf of Mexico. The Minnesota State Historical Society sent an expedition to the region and disproved Glazier's claims.

Gleaning, the act of gathering after reapers or gatherers, as the gleanings of grapes. Gleaning was an established practice among the Jews, and was sanctioned by the law of Moses, who enjoins them, when they reap the harvest, not wholly to reap the corners of the field, nor gather the gleanings, which were to be left for the poor and the stranger.

Gleason, Elliott Perry, an American inventor; born in Westmoreland, N. H., June 27, 1821; received a common school education; was one of the first to manufacture gas burners; and invented the regulating argand burner and other lighting devices.

Glebae Adscripti, in the Roman empire, from the 4th century onward, the cultivators of the soil, who, though personally free, were inseparably attached to the land they cultivated. They paid a fixed rent in kind to the owner of the domain, and, when he retained any land in his own hands, they were generally under the obligation to render him free a determinate amount of labor to till it. If the land was sold, they still remained attached to it. The Helots of Sparta were also glebæ adscripti. The serfs of Russia and peons of Mexico held a similar position.

Glebe, in the established Churches of England and Scotland, the land possessed as part of the revenue of an ecclesiastical benefice, usually along with a dwelling house. In Scotland, where lands are arable, the glebe must consist of four acres at least. The glebe must be taken as near the manse as possible.

Glee, a musical composition for voices in harmony, consisting of two or more contrasted movements, with the parts so contrived that they may be termed a series of interwoven melodies. It may be written for three or more voices; but it is necessary that there should be only one voice to a part. It may be designed with or without instrumental accompaniment, and set to words in any style.

Gleemen, itinerant minstrels, so called by the Anglo-Saxons. The name appears to have been supplanted by the Norman minstrels shortly after the Conquest.

Gleig, George Robert, an English writer; born in Stirling, April 20, 1796; entered the army, and served in Spain in 1813 and in America in 1814. He deserves mention as the author of the story "The Subaltern" (1825), founded on incidents of the Peninsular war. He died near Winchfield, in Hampshire, July 9, 1888.

Gleim, Johann Wilhelm Ludwig, a German poet; born in Ermsleben near Halbertstadt, April 2, 1719; died in Halberstadt, Feb. 18, 1803.

Glen, William, a Scottish songwriter; born in Glasgow, Nov. 14, 1789. His "Wae's me for Prince Charlie," a Jacobite song, is widely known. He died in Glasgow, December, 1826.

Glenalmond, a valley of Perthshire, Scotland, much visited for its scenery, and for Ossian's grave — the subject of Wordsworth's verses on the "Narrow Glen." It is the seat of Trinity College, Glenalmond (1847), whose buildings have been to some extent reproduced in those of Trinity College, Hartford, Conn.

Glencoe, a valley in the county of Argyle, near the head of Loch Etive, Scotland. It is bounded on both sides by almost perpendicular mountains over 3,000 feet high, and is traversed by a mountain stream, Ossian's "dark torrent of Cona." The valley was the scene of a tragedy known as the massacre of Glencoe. The state of the Highlands after 1690 was a subject of great anxiety to the government. Although the Highlanders had ceased any important operations since the death of Dundee at Killiecrankie, they had not laid down their arms. In

1691 a proclamation was issued promising pardon to all who should swear allegiance on or before Dec. 31, 1691. All the chiefs, with the exception of one Ian of Glencoe, complied. The latter had unfortunately exceeded the prescribed period, and a certificate which he produced to prove that he had offered to take the oaths at Fort William was suppressed, as is thought, by Stair. The king's signature was obtained to an order to extirpate the MacDonalds. On Feb. 1 a party of soldiers, 120 in number, commanded by Captain Campbell of Glenlyon, marched up the glen and took quarters as friends. The soldiers belonged mostly to the clan Campbell, enemies of the MacDonalds; but they were well treated, and all went merrily for 12 days. At 5 in the morning of the 13th Glenlyon and his men suddenly fell on the MacDonalds. Thirty-eight men were murdered, but many who had escaped perished in the snow, sank into bogs, or died for lack of food.

Glendower, or **Glendwr, Owen,** a Welsh chief; born in Montgomeryshire about 1354. Shortly after the accession of the new king part of Glendower's lands were seized by his neighbor, Lord Grey of Ruthin. Thereupon the Welshman, being unable to obtain redress from the English king, took up arms in his own cause, and in 1400 commenced operations by seizing the estates of Lord Grey. The king ordered his subjugation, and granted his estates to his brother, the Earl of Somerset. Then for two years Glendower carried on a guerrilla warfare against the English marches. In 1402 he drew Lord Grey into an ambush, and took him prisoner. In this same year Sir Edmund Mortimer, the uncle of the Earl of March, was also captured by Glendower. Both Grey and Mortimer married daughters of the Welsh chieftain and with him formed the coalition with Harry Percy (Hotspur) against Henry of England. That coalition ended in the battle of Shrewsbury in July, 1403, in which the English king gained a decisive victory, Hotspur being among the slain. In June of the following year Glendower entered into a treaty with Charles VI. of France, who in 1405 sent a force to Wales to act against the English. Meantime, in the spring of 1405, Glendower had been twice severely defeated by Prince Henry of England. The Welsh prince nevertheless kept up a desultory warfare during the remaining years of his life. He never submitted to English rule, and is believed to have died peacefully in Monmouthshire after 1416.

Glenfinnan, a Highland glen in Inverness-shire, Scotland; 18 miles W. of Fort William. Here, on Aug. 19, 1745, the clans gathered under Prince Charles Edward's banner, and here in 1815 was erected to his memory a tower bearing an inscription in Gaelic, Latin, and English.

Glenlivet, the valley of Livet Water in Banffshire, Scotland. In the battle of Glenlivet or Alltacoileachan, Oct. 4, 1594, 10,000 Protestants under the Earl of Argyll were routed by the Catholic insurgents under the Earl of Huntley.

Gliddon, George Robbins, an American archæologist; born in Devonshire, England, in 1809. In early youth he was sent out to Egypt, where his father was established as a merchant, and also United States Consul at Alexandria. He ultimately succeeded his father as United States Consul, and resided for many years in Egypt and the Levant, actively prosecuting researches in the antiquities and ethnology of those countries. About 1840, he returned to Europe, whence he came to the United States, where he lectured in all the principal cities on Oriental archæology and was appointed agent for the Honduras Interoceanic Railroad Company. He died in Panama in 1857.

Globe, a sphere, a round solid body which may be conceived to be generated by the revolution of a semicircle about its diameter. Globe, or artificial globe, in geography and astronomy, is more particularly used to denote a globe of metal, plaster, paper, pasteboard, etc., on the surface of which is drawn a map or representation of either the heavens or the earth, with the several circles which are conceived on them, the former being called the terrestrial globe, and the latter the celestial globe. The celestial globe is intended as a representation of the heavens, on which the stars are marked according to their several situations. The terrestrial globe is an artificial representation of the earth, exhibiting its great divisions. The axis of the earth is an imaginary line passing through its center, and the wire on which the artificial globe turns represents this line. The poles of the earth are the extremities of this axis; that on the N. is called the arctic, that on the S. the antarctic pole. The brazen meridian is the circle in which the artificial globe turns, divided into 360 degrees. Great circles, as the equator, ecliptic, and the colures, divide the globe into two equal parts; small circles, as the tropics, polar circles, parallels of latitude, etc., divide the globe into two unequal parts. Meridians, or lines of longitude, are semicircles extending from the N. to the S. pole, and cutting the equator at right angles.

Every place on the globe is supposed to have a meridian passing through it. When the sun comes to the meridian of any place (not within the polar circles) it is noon or midday at that place. The first meridian is that from which geographers begin to reckon the longitudes of places. The equator, a great circle of the earth, equidistant from the poles, divides the globe into two hemispheres, Northern and Southern. The latitudes of places are reckoned from the equator N. and S., and the longitudes are reckoned on it E. and W. The equator, when referred to the heavens, is called the equinoctial, because when the sun appears in it the days and nights are equal all over the world, namely, 12 hours each.

Horizon when applied to the earth is either apparent or real. The sensible or visible horizon is the circle which bounds our view, where the sky appears to touch the earth or sea. It extends only a few miles. The real or true horizon is an imaginary plane passing through the center of the earth parallel to the sensible horizon. The wooden horizen circumscribing the artificial globe represents the true horizon on the earth. The cardinal points of the horizon are E., W., N. and S.

The latitude of a place on the terrestrial globe, or its distance from the equator in degrees, minutes, or geographical miles, etc., is reckoned on the brass meridian from the equator toward the N. or S. pole. The longitude of a place on the terrestrial globe is the distance of the meridian of that place from the first meridian, reckoned in degrees and parts of a degree, on the equator. Longitude is either E. or W. according as a place is either E. or W. of the first meridian. No place can have more than half the circumference of the globe.

Glossary, a vocabulary or dictionary of glosses, or explanations of words obsolete or rare, or occurring only in works of a special class as technical terms, or of provincial dialectal forms or words.

Glottis, the mouth of the windpipe. It constitutes a narrow aperture covered by the epiglottis when one holds his breath or swallows. It contributes by dilatation and contraction to the modulation of the voice. It is sometimes called the rima glottis, that is, the fissure or chink of the glottis.

Gloucester, a city and parliamentary borough, river port and county-seat of Gloucester co., England. The most remarkable public edifice is the cathedral; it was originally the church of a Benedictine abbey, dating from 1058, and was converted into a cathedral at the Reformation. It is cruciform, 444 feet in length, 154 in breadth, and 85½ in height, with a tower 230 feet high. It exhibits a great variety of styles, the choir with its roof of fan tracery being a fine example of Perpendicular Gothic. Pop. (1901) 47,943.

Gloucester, a city and port of entry of Essex co., Mass., and Massachusetts Bay, near the extremity of Cape Ann, and on the Boston and Maine railroad; 32 miles N. E. of Boston. It is one of the most important fishing ports and fish markets in the world, having over 500 vessels and 6,000 men engaged in the fisheries. Cod, haddock, halibut, herring, and mackerel are the principal catches. The city has considerable historical interest. It was founded in 1623, principally by settlers from Gloucester, England, from which it received its name; was incorporated as a town in 1642; and became a city in 1874. It has the oldest Universalist Church in the United States, founded in 1770. Pop. (1900) 26,121.

Glove, an article of dress; a covering for the hand. Its use reaches back to a remote antiquity.

Gloversville, a city in Fulton co., N. Y.; on the Fonda, Johnstown, and Gloversville railroad; 50 miles N. W. of Albany. It is celebrated for its manufacture of gloves, producing about two-thirds of the entire output in the United States. Pop. (1890) 13,864; (1900) 18,349.

Glow Worm, a beetle of which the male flies and does not shine, while the female shines and does not fly. It is from the latter sex, therefore, that the name glow worm has been derived. Probably the phosphoric light, which is intermittent, and can be displayed or withheld at the will of the insect, is used by the female to attract the male.

Gluck, Christoph Willibald, a German composer; born in Weidenwang, July 2, 1714; studied music at Milan, under San Martini, and presented soon afterward several operas in theaters in Italy. Judging that his want of success was partially due to the weakness of the libretti, he conjoined with himself in his labors the poet Ranieri di Calzabigi, and his next subsequent opera, "Helena and Paris," was received with tumults of applause. In 1774 he went to Paris, and presented there successively several masterpieces. He died in Vienna, Nov. 15, 1787.

Glucose, a fermentable sugar, which occurs in two modifications, called dextro-glucose, or dextrose, and lœvo-glucose, or Levulose, according as it turns the plane of polarization to the right or left. A solution of cane sugar warmed with dilute acids, or left in contact with yeast, is converted into dextrose and levulose.

Glue, an impure gelatine. It is prepared from the clippings of hides, hoofs, and horns. These are steeped for several days in lime-water, to remove the hair and blood, and then drained and dried in a current of air for some days, that the lime may absorb carbonic acid, and thus prevent the injurious effects of the alkali upon the gelatine. They are then boiled in water until the solution is found to gelatinize firmly on cooling. The impurities are allowed to settle, after which it is allowed to gelatinize in shallow wooden boxes, cut into slices and dried upon nets. Good glue is semi-transparent, and free from spots and clouds. When wanted for use, it is broken in pieces and steeped in cold water till it softens and swells. It is then melted over a gentle fire, or, what is better, in a water bath, and applied in a liquid state with a brush. As the stiffening of glue depends on the evaporation of its superfluous moisture, it will not harden in a freezing temperature. Marine glue is a composition used for cementing materials that are exposed to moisture. It is made by dissolving 1 part of india-rubber in 12 parts of mineral naphtha, and adding 20 parts of powdered shellac. It not only resists wet, but cements glass and metals as well as wood. White fish glue, or diamond cement, is made of isinglass dissolved in alcohol.

Gluten, an albuminous substance, obtained from wheat-meal. It is a tenacious, yellowish-gray, elastic mass, which dries into a horny, semi-transparent mass, resembling glue.

Glutton, a genus of carnivorous quadrupeds distinguished by the head being but moderately elongated and the body long in proportion to its height from the ground. The ears are rounded and very short. There is a simple fold of the skin below the tail, instead of the pouch observable in the badger, to which animal it bears some resemblance. Desmarest describes four species, one of which, the wolverene, is an inhabitant of the N. parts of America. The wolverene is about 28 inches in length from the tip of the nose to the origin of the tail, which latter is about 8 inches, if the hair at the extremity be included, which is from 3 to 4 inches long. The whole body is covered with very long and thick hair, which varies in color according to the season or other circumstances. Its summer coat is generally as follows: Face blackish as high as the eyebrows, and between these and the ears whitish or brownish; ears covered with coarse hairs; the lower jaw and the inside of the fore legs spotted with white; upper part of the back, thighs, and under part of the belly, brown or brownish black; sides, chestnut color. Its fur is of considerable value and is much used. It is one of the most destructive of quadrupeds found in the N. part of America, destroying great numbers of young foxes and other animals; it is also a great enemy to the beaver, watching them as they come out of their houses, or even breaking into their habitations.

Glycerin, or **Glycerine,** a thick colorless, inodorous, neutral syrup, which has a very sweet taste; it mixes with water in all proportions, is soluble in alcohol and in chloroform, but insoluble in ether. Glycerin was discovered in 1778 by Scheele, who obtained it in the preparation of lead plaster by saponifying lard with oxides of lead. Glycerin occurs in most natural animal and vegetable fats in combination with fatty acids, from which it can be obtained by saponifying with alkalies. It is also formed during the alcoholic fermentation of sugar. Glycerin is used for preserving fruits, also as a solvent for various salts, and in preparing copying-ink; also as a lubricator for machinery and clockwork, and is placed over water in gas meters to prevent freezing, and is used for filling floating compasses. It is employed in the form of nitroglycerin in the preparation of dynamite, and for mixing with soap to form glycerin soap, which tends to soften the skin. Glycerin is often used to adulterate wine, beer, milk, etc.

Glycerin is used on account of its physical properties as an adjunct to lotions in skin diseases to prevent the surface becoming dry.

Glycon, an Athenian sculptor known by his colossal marble statue of Heracles, commonly called the "Farnese Hercules," now in the museum at Naples. He probably lived in the 1st century B. C.

Glyptodon, a huge fossil mammal, family armadillos. It was encased in armor, there being bony plates on the head, and nearly hexagonal bony scutes on the body. It belongs to the Post-pliocene of South America. Including the tail, it was more than nine feet long.

Gnat, a genus of insects represented by numerous widely distributed species, and specially abundant in marshy districts. The male gnat sips nectar from the flowers and passes his days in dancing in the sunlight; the female spends her days and nights in pursuit of men and cattle from whom she may suck her more nutritious, if less delicate, diet. The proboscis, whose double function of piercing and sucking was noticed even by Pliny, is an extremely complex structure composed of representatives of the three usual mouth appendages. The humming sound produced by the female in flying, the deeper notes of which are due to the rapid vibration of the wings (computed at 3,000 per minute), the higher to membranes on the thoracic openings of the air tubes, serves in part, doubtless, to attract the males. Several generations of gnats follow one another in a season. Gnats occasionally swarm together in such numbers that they present the appearance of dense clouds of smoke.

Gneisenau, August Wilhelm Anton, Graf Neithardt von, a Prussian general; born in Schildau, Prussian Saxony, Oct. 27, 1760. In 1782 he accompanied the German auxiliaries of England to the American colonies. On his return he joined (1786) the Prussian army, and 20 years later fought at Saalfeld and in the battle of Jena. His most meritorious work was his share in the Waterloo campaign, in which he was chief of Blucher's staff, and principally directed the strategy of the Prussian army. He had been 15 years on the retired list when, in 1831, on the outbreak on the Polish rebellion, he was made field-marshal and given command of the Prussian army on the Polish frontier. He died in Posen, Aug. 24, 1831.

Gneiss, a metamorphic rock, consisting of orthoclase, quartz, and mica.

Gneist, Heinrich Rudolf Hermann Friedrich von, a German jurist; born in Berlin, Aug. 13, 1816. He entered official life as assessor in the Superior Court in 1841, and was successively assistant-judge of the same court and of the supreme tribunal, till in 1850 he resigned this position in order to devote himself exclusively to teaching; for since 1844 he had held the chair of jurisprudence in Berlin University From 1858 he sat in the Prussia ower House as a National Liber. and was also elected a member of the Imperial Parliament. He was ennobled in 1888, and died July 21, 1895.

Gnesen (Polish Gniezno), a Prussian town, in a region of hills and lakes, 31 miles E. N. E. of Posen. It has a Catholic cathedral, dating from 965, and till 1320 was the coronation place of the Polish kings. It passed to Prussia in 1814.

Gnome, in mediæval mythology, the name given by cabalistic writers to one of the classes of imaginary beings which are supposed to be the presiding spirits in the mysterious operations of nature in the mineral and vegetable world. They have their dwelling within the earth, where they preside specially over its treasures, and are of both sexes, male and female. Also a small and ill-favored person; a dwarf; a person of outlandish appearance; a misshapen being.

Gnomon, in astronomy, a rod, style, or pillar erected perpendicularly to the horizon, from whose shadow the altitudes, declinations, etc., of the sun and stars may be determined. Such styles were in use in ancient Egypt, in China, and similar contrivances were found at Quito by the invading Spaniards. Also the style or pin, which, by its shadow on the dial plate of a sun dial, shows the hour of the day.

Gnosticism, a system of philosophy professedly Christian, devised to solve the great questions, such as the origin of evil, which have perplexed the ablest minds in every age. Gnosticism accepted beliefs in an eternal God of infinite power, wisdom, and goodness. Matter was eternal, and from the first essentially evil; there was then no bygone time when the "origin of evil" took place. Nor was the world created by the Supreme Being; it was framed by an exalted spirit, called in consequence the Demiurge, whom many identified with the God of the Jews. He had shining qualities, but was selfish and arrogant. He wished men to worship, not the Supreme Being, but himself. The former was the purest Light, and pervaded that boundless space which the Greeks called pleroma. He did not remain forever alone, but brought into existence two holy and happy spirits of different sexes, called Æons, from whose marriage came others of the same order, till there was a whole family of them in the pleroma. The chief of these Æons was Jesus Christ, who was sent to the world to win it back from the Demiurge to its proper allegiance. The germs of gnosticism existed in the 1st century; it did not, however, reach maturity till the reign of Adrian in the 2d. The system had declined by the 3d century, but was not extinct till about the 6th.

Gnu, a species of antelope. The adult male is about 5 feet 6 inches long, and 3 feet 10 inches high at the shoulder; horns, dark, broad, upon the summit of the head, tapering out sideways over the eyes, and turning up into a pointed hook, legs long. The gnu lives in small herds in the karroos of Southern Africa. When alarmed it flings up its heels and capers like a restive horse; then the herd goes off in single file, following a leader, with amazing speed. A gnu brought to bay or wounded turns on its assailant.

Goa, a maritime city of India, chief city of the district of the same name, and formerly capital of all the Portuguese settlements in India, on an island of the same name, at the mouth of the Mandona, 250 miles S. S. E. of Bombay. Goa consists of Old Goa and New Goa. The old city, now almost deserted, contains some splendid churches and other specimens of architecture. New Goa, or Panjin, at the mouth of the river within the forts, is the residence of the viceroy and of the principal inhabitants. It carries on trade with Portugal, China, and the coast of Africa, and is principally engaged in the salt industry.

Goal, the winning post in a race; the point or mark set to bound a race. in football, the space marked by goal posts and a cross bar to define the required path of the ball in order that a "goal" may be scored.

Goat, the domestic goat, which exists, in a wild or semi-wild state, in all the European mountain ranges. The males fight furiously with each other in the rutting time. They have an offensive smell. A most important variety, formed into a breed by artificial selection, is the Angora goat, where almost the whole body is enveloped in that long, silky, white hair which is so familiarly valuable and comfortable. The Angora goat has been introduced into the United States. The Kashmir goat, from Tibet and Bokhara, is almost equally valuable, furnishing the white to brown hair used in making Kashmir wares. It has been successfully acclimatized in France. A third variety, utilized in the same way, is the Mamber goat from Asia Minor and Tartary, distinguished by its long pendent ears. The Syrian goat, which also has long ears, is trained in the East to all manner of tricks — especially to balance itself on a slender pile of small wooden blocks, built up to a height of several feet. The Alpine ibex is a magnificent goat, without beard, but with very strong, slightly divergent, much-ridged horns. It used to be abundant, but through overhunting, both for sport's sake and on account of supposed medicinal virtues, has become nearly extinct. In its native haunts it is said "to surpass even the chamois in the certainty with which it estimates distances for extraordinary leaps."

BIG HORN GOAT.

The goat is capable of the most perfect domestication, and becomes extremely attached and familiar. It is apt, indeed, to prove a troublesome pet, and makes use of its horns, though not angrily, much more freely than is at all agreeable. The uses of the goat are numerous. The flesh is good; that of the kid, or young goat, is in most countries esteemed a delicacy. Requiring but little attention, and able to subsist on rough diet, the goat is in many countries "the cow of the poor." The milk is very rich and nutritious, more easy of digestion than that of the cow, and often useful to consumptive patients. Some goats yield as much as four quarts of milk daily, though the average quantity is more nearly two. Both cheese and butter are made of goats' milk; they have a peculiar but not disagreeable flavor. Goats' milk is still very much used in Syria and other parts of the East, as it was in the days of the patriarchs. The skin of the goat was early used for clothing, and is now dressed as leather for many uses, particularly for making gloves and the finer kinds of shoes. The hair, which may be advantageously clipped annually, is used for making ropes which are indestructible in water, and for making wigs for judges, barristers, and other functionaries. The horns are used for making knife handles, etc. The goat ruins young plantations, and makes reforesting in some cases impossible. The Rocky Mountain goat is an antelope rather than a goat.

In Christian art the goat is an emblem of impurity. It sometimes occurs in the carving under seat or choir-stalls, and is put there as a mark of dishonor.

Goat Moth, a large moth, with a black head and an offensive odor, supposed to bear, as to the head, a resemblance to a goat.

Gobelin, a family of French tapestry-makers and dyers who became famous for the exquisite tapestries they manufactured. They were descended from Jean Gobelin, who founded the establishment in Paris and died in 1476. About 1667 the manufactory was turned into a royal establishment under Louis XIV. The factory still produces the finest tapestry in the world.

Gobi, Desert of, the Shamo, or "sand-sea" of the Chinese, an immense tract of desert country, occupying nearly the center of the high tableland of Eastern Asia, and extending over a large portion of Mongolia and Chinese Turkestan. Its length is probably about 1,800 miles; mean breadth, between 350 and 400 miles; area, 300,000 square miles. Its genral elevation is over 4,000 feet above ea-level. The East Gobi is occupied by different tribes of the Mongolian ace, who have numerous herds of camels, horses, and sheep. In the West Gobi are some nomadic tribes of the Tartar race. This tract is supposed at one time to have been a great nland sea.

Gobineau, Joseph Arthur, Comte de, a French diplomatist, ethnologist, and romance-writer; born in Bordeaux, France, in 1816. During a long diplomatic career he held important positions at Athens, Copenhagen, and Rio Janeiro; was a member of the embassy to Persia, 1855; and Imperial Commissary to the United States, 1861. He died in Paris, Oct. 17, 1882.

Gockingk, Leopold Friedrich Gunther von, a German poet; born in Groningen, Halberstadt, July 13, 1748. He died in Wartenburg, Silesia, Feb. 18, 1828.

God. The Supreme and Omnipotent Creator and Lord of the Universe.

Godavari, one of the principal rivers of India, rises from the Western Ghats, within 50 miles of the Indian Ocean and crosses the Deccan in a S. E. course. After passing through the Eastern Ghats it separates into several arms and falls into the Bay of Bengal, which it enters by seven mouths, after a course of 898 miles, its total drainage area being estimated at 112,000 square miles. It has been called the Indian Rhine. The Godavari is one of the 12 sacred rivers of India, and the great bathing festival, called Pushkaram, is held on its banks once in 12 years.

Goddard, Arabella, an English pianist; born near St. Malo, Brittany, Jan. 12, 1836. She took her farewell of the British public in 1873, and then made a tour to the United States, returning to England in 1876.

Godefroy, Frederick, a French lexicographer; born in Paris, Feb. 13, 1826. His monumental effort is the voluminous "Dictionary of the Old French Languages and of All Its Dialects from the Ninth to the Fifteenth Century."

Godet, Philippe Ernest, a Swiss author; born in Neuchatel, April 23, 1850. He was bred to the law, but abandoned it for journalism. As a poet he pleases, without stirring any profound depths. In prose he wrote: "The Literary History of French Switzerland," his greatest work, which won the French Academy's Guerin prize.

Godfather and **Godmother** (also called sponsors), the persons who, by presenting a child for the sacrament of baptism, which is regarded as a new spiritual birth, are reputed to contract toward the newly baptized the relation of spiritual parentage. In the Roman Catholic Church this spiritual relationship is regarded as a species of kindred, and constitutes an impediment of marriage between the sponsors on the one hand and the baptized and the parents of the baptized on the other.

In the Anglican Church, by whose rule two godfathers and a godmother are required at the baptism of a male, and two godmothers and a godfather at that of a female, no impediment of marriage arises from the relation of the sponsors to the baptized. The parents of the baptized are not permitted to act as sponsors in the Roman Catholic Church, one of the objects of the institution being to provide instructors in case of the death of parents; but the present rule of the Church of England, following the rubric of the American Prayer Book, does so allow.

Godfrey of Bouillon, leader of the first crusade, son of Eustace II., Count of Boulogne; born near Nivelles, in 1061. He distinguished himself while fighting for the Emperor Henry IV. in Germany and Italy, and was made Duke of Bouillon. In order to expiate his sin of fighting against the Pope, he took the cross for the Holy Land in 1095, and led 80,000 men to the East by way of Constantinople. The town of Antioch fell into their hands in 1098, and in the following year Godfrey took Jerusalem itself, after five weeks' siege. The leaders of the army elected him king of the city and the territory; but Godfrey would not wear a crown in the place where Christ was crowned with thorns; and contented himself with the title of Duke and Guardian of the Holy Sepulcher. The defeat of the

Egyptians at Ascalon placed him in possession of all the Holy Land, excepting two or three places. Godfrey now turned his attention to the organization of his newly-established government, and promulgated a code of feudal laws called the Assize of Jerusalem. Godfrey was a favorite subject of mediæval poetry, and is the central figure of Tasso's "Jerusalem Delivered." He died in Jerusalem, July 18, 1100.

Godfrey of Strasburg, a German poet, who flourished about 1200. Besides many lays, we are indebted to him for the great chivalric poem, "Tristan and Isolde," derived from the legends of the Round Table.

Godfrey, Thomas, an American poet; born in Philadelphia, Pa., Dec. 4, 1736. He wrote in 1759 "The Prince of Parthia," a tragedy, believed to be the first dramatic work written in the United States. His poems were collected in 1767 by his friend, Nathaniel Evans. He died near Wilmington, N. C., Aug. 3, 1763.

Godiva, the wife of Leofric, Earl of Mercia and Lord of Coventry in the reign of Edward the Confessor. Tradition says that, in 1040, she rode on her palfrey naked through the town of Coventry on her husband's promise that if she would do so he would relieve the inhabitants of certain exactions which bore heavily on them. She had first proclaimed that no one should leave his house before noon, that all windows and other apertures in the houses should be closed, and that no one should even look out till noon was past. Only one person, "Peeping Tom," the story says, attempted to look out, and he was immediately struck blind. A yearly pageant, in which a young woman enacted the part of Godiva, was long kept up at Coventry, and still occasionally takes place. Tennyson based one of his poems on this incident.

Godkin, Edwin Laurence, an American journalist and essayist; born in Moyne, Ireland, Oct. 2, 1831. He graduated from Queen's College, and came to the United States in early manhood. After 1865 he was prominent in journalism, and especially as editor of the "Evening Post." He had a trenchant and even a bitter style, and provoked vigorous antagonism. H died May 20, 1901.

God's Acre, a burying-ground attached to a church or place of worship.

Godsche, Hermann, a German author; born in Trachenberg, Silesia Feb. 12, 1815; died in Warmbrunn Nov. 8, 1878.

God's Truce, in the Middle Ages a means introduced by the Church to check in some measure the hostile spirit of the times, by establishing certain days or periods during which all private feuds were to cease. It seems to have taken its rise about the latter part of the 10th or beginning of the 11th century. At first the Church forbade all feuds on those days of the week which were especially consecrated by the death and resurrection of Christ; namely, from Thursday evening to Monday morning, and threatened with excommunication any who transgressed that order. Afterward the period was extended so as to include the whole of Thursday, the whole of the period from the beginning of Advent to the Epiphany, and certain other times and saints' days. The precincts of churches, convents, and graveyards were also interdicted from any hostile encounters.

Godwin, Parke, an American journalist and author; born in Paterson, N. J., Feb. 25, 1816; was graduated at Princeton College in 1834; studied law and was admitted to practise, but preferred literary pursuits. He married a daughter of William Cullen Bryant, and from 1837 was for many years connected with the New York "Evening Post." During the administration of President Polk he was deputy collector of New York. He edited in 1843–1844 "The Pathfinder," and was for some years a contributor to the "Democratic Review." Of "Putnam's Magazine" he was for a considerable time the principal editor, and always a contributor.

Godwit, a wading bird. They undergo a double moult, having red plumage when young, and then, after moulting, black with a base of white; on the wings also is a white spot. The female is larger than the male. The godwit occurs in Europe, also in Africa and India.

Goethe, Johann Wolfgang von, . German poet, dramatist, and prose vriter; born in Frankfort-on-the-Main, Prussia, Aug. 28, 1749. His father vas a counsellor of State. Goethe ias described his own life in which he ives us the key to the most important eriods of his life and consequently to he productions by which they were espectively distinguished. The Seven Years' War broke out when Goethe vas eight years old, and Count de Thorane, lieutenant du roi of the rench army in Germany, was quarered in the house of his father. The ount was a man of taste and a paron of art. He encouraged the youth n his artistic aspirations; and some pictures relating to the story of Joseph, which were produced at this ime, were actually painted from his suggestions. At the same time he earned the French language practicaly; and a French company, then perorming at Frankfort, awakened his aste for dramatic performances. Drawing, music, natural science, the elements of jurisprudence, and the languages, occupied him alternately. By his study of Hebrew Goethe became more intimately acquainted with the Old Testament, and the "History of Joseph" was his first poetical work.

Goethe very early fell in love, and as often happens in the case of boys of an ardent temperament, with a girl older than himself. Her name was Margaret, the name which Goethe afterward gave to the mistress of Faust. In 1765 he went by his father's desire to Leipsic, but did not follow any regular course of studies. German poetry was then in a critical state. Precision and conciseness were then the great desiderata. Goethe, however, at this period as throughout his life embodied in a poetical form, whatever delighted or grieved, pleased or displeased him; in a word, whatever occupied his mind intensely. Several dramatic pieces were also projected by him at this period. He subsequently went to the University of Strasburg to pursue the study of law according to the wish of his father, but gave in fact more attention to the study of chemistry and anatomy than to that of law. In 1771 he took the degree of Doctor of Jurisprudence and wrote a dissertation on a legal subject. The attention of the public was first attracted to him by his "Gotz von Berlichingen" (1773). "Werther" appeared in 1774. Not long after the publication of "Werther," Charles Augustus, the hereditary Duke of Saxe-Weimar, made the acquaintance of Goethe on a journey and when in 1775 he took the government into his own hands, he invited Goethe to his court. Goethe accepted the invitation, and on Nov. 7, 1775, arrived in Weimar. Shortly before he had made a tour in Switzerland with the brothers Stolberg. In 1776 he was made privy councillor of legation, with a seat and vote in the privy council. In the same year he made a second journey to Switzerland, on this occasion in company with the duke. In 1782 he was made president of the chamber and ennobled. In 1786 he made a journey to Italy, where he remained two years, visited Sicily, and remained a long time in Rome.

This residence in Italy had the effect of still further developing his artistic powers, by the contemplation of the treasures of art in that country, by intercourse with the society he met there, and by practice. In 1790 was published the earliest form of the first part of "Faust," with the title "Dr. Faust, ein Trauerspiel," a poem in a dramatic form, which belongs rather to Goethe's whole life than to any particular period of it. The subject of this work had engaged the attention of Goethe very early, and continued to occupy his mind during his whole life; and the poem, even in its first form, was the result of many years' intermittent labor. It was made the depository of the author's most general views on the problems of existence; all that is highest and deepest, most beautiful and most touching in human life is here contained, along with what is tame and commonplace; and it is this universality of content, combined with the never-dying interest belonging to the general conception of the poem, the representation of the perpetual opposition between the demands of materialism and the demands of spiritualism, which makes this drama of Goethe's a true world poem.

If we survey the variety of the productions of this great man, not only in all branches of poetry, but also in natural science, we cannot help admiring the activity and versatility of his genius — his manysidedness. His genius appears most wonderful if we throw a glance at what German literature was when he found it, and what it is now that he has left it, and how it has been affected by him. Goethe was born at a period when the modern German literature was far from having acquired independence and consistency; and in the different periods of his life it is easy to discover the influence at one time of French literature, at another of classic literature, etc.; but these influences, though sufficient to destroy the vigor and energy of many a genius, rather served to develop his powers more fully. It cannot be denied, however, that even he sometimes was led astray, as, for instance, in his polished and cold "Eugenie." But in what branch has Goethe most excelled? Is it the epic? He enriched German literature with some of the most popular epic productions; but his epic descriptions cannot rival the best descriptive compositions of English literature. Is it the drama? He produced some beautiful dramas, and his "Iphigenia" will always be considered as a masterpiece; but, generally speaking, his dramas do not give us sketches of great, important, or interesting characters, nor the picture of a great action — the two chief points of dramatic poetry; and he stands in this respect very far below Shakespeare. Is it didactic poetry? He wrote several didactic poems, but he cannot be said to have excelled in this branch. Is it the novel? He presented German literature with some novels which will always rank among the best; but their excellence is not in the plot, nor particularly in the characters described. In short, what is the prominent feature of Goethe's excellence? We think Goethe must be called, preëminently, the poet of philosophy. It is the philosophy of life and of individual character pervading his works which places them among the first ever produced. Hence his greatest production is his "Faust," emphatically a philosophical poem, which will long remain unrivaled; for it is the best of Goethe's productions in a department for which he seems to have been born.

His beautiful songs and shorter poems, elegies, distichs, etc., have the same peculiar character; for though many or most of them cannot be called preëminently philosophical, yet they are tinged with the profound reflections of his philosophical mind, and continually remind us of the deep wells from which our griefs and joys, fears and hopes spring. The circumstance that there was in Goethe's time in Germany no national life, that no grand ideas affected the whole mass with a common impulse, that there are few historical recollections which are sources of a common pride to the whole nation — all this had a great influence on Goethe. It was one of the reasons of his universality, and also the reason that his genius directed itself to the delineation of the character of the individual man, considered apart from the influences which act so strongly upon the mind in communities more strongly imbued with a common spirit. In this respect he resembles not a little the poets and wise men of the East, who, under a despotism which crushes freedom of action, concentrate their thoughts on the inward man. In 1806 Goethe married Christiane Vulpius, with whom he had lived since 1788, and to whom he was strongly attached. Goethe died at Weimar, March 22, 1831.

Goffe, William, an English parliamentary soldier, one of the judges of Charles I.; born about 1605. He became a major-general in the Parliamentary army, sat in the House of Commons and in Cromwell's "other house," and was one of the judges who signed Charles I.'s death-warrant. In 1660, with his father-in-law, Edward Whalley, he fled to America; they lay in hiding about New Haven from 1661 to 1664, when they went to Hadley, Mass. There they lived for many years in seclusion. According to tradition, when the townsmen were called from the meeting-house to repel an Indian attack, and were standing irresolute, Goffe put himself at their head and drove off the redskins, and then disappeared as suddenly as he had come. He died in Hadley, Mass., in 1679.

Gog and Magog, names several times used in the Bible, and given to the famous figures of giants in the Guildhall, London. Magog is spoken of by the writer of Genesis as a son of Japhet; Ezekiel speaks of Gog, Prince of Magog, as a terrible ruler in the far N., united with the Persians, Armenians, and Cimmerians against Israel; Gog and Magog in the Apocalypse appear as coördinate terms comprehending all future enemies of the kingdom of God.

Gogol, Nikolai, a Russian novelist and miscellaneous writer; born in the government of Pultowa, March 31 (N. S.), 1809. He is the author of a novel entitled "Dead Souls" (which was received with great enthusiasm by his countrymen, and was translated into English with the title of "Home-life in Russia"). The reputation of Gogol was seriously impaired by his subsequent writings, but some years after his death renewed interest was taken in his work; especially in the United States, where his books were largely translated. He spent some years abroad, returned to Russia in 1849, and died in Moscow, March 4 (N. S.), 1852.

Goiter, or **Goitre** (Latin, guttur = the throat), same as bronchocele. It arises from a morbid enlargement of the thyroid gland, causing an unsightly but painless deformity. It is more common among women than among men.

Golconda, an extensive fortress of the Nizam, India. In its immediate neighborhood are the ruins of an ancient city, once the metropolis of the powerful kingdom of Golconda, which reached its height at the close of the 16th century and endured till 1687. The fort is now held by a small garrison from Hyderabad, and serves as the Nizam's treasury, and also as a state prison. Golconda is proverbially famous for its diamonds; but in truth, they were merely cut and polished here.

Gold, a metal distinguished from other common metallic elements by its beautiful characteristic yellow color which it preserves untarnished on exposure to the atmosphere under nearly all conditions. Pure gold has a high metallic luster, but is inferior in this respect to steel, platinum, and silver. The metal possesses a higher specific gravity than any common metal, but is exceeded in this respect by platinum. The metal is thus 1½ times heavier than lead and nearly twice as heavy as silver, bulk for bulk. Gold melts at 1045° C., being somewhat more infusible than silver and more fusible than copper.

The pure metal is somewhat harder than lead, but softer than copper, silver, platinum, zinc, or iron. It is consequently too soft, in the pure state, for the purposes to which it is generally applied. For practical application it is alloyed with copper or silver, and both these metals are often present. The former renders the gold redder and the latter paler than its true color.

Gold is very widely distributed, smaller or larger quantities being found in nearly every country. The ancients obtained gold from the Spanish Peninsula, Greece, Asia Minor, and India. The Ophir of the Bible has been variously located. Possibly it was in East Africa. In more modern times Peru, Bolivia, Brazil, Chile, Mexico, and other countries of South and Central America furnished immense supplies of gold after the discovery of America until about 1850. By far the greatest discoveries of gold have been made during the 19th century. The discovery of the Californian placers in 1848, and of the Australian placers in 1851, produced a mad rush to the diggings. In 1858 gold was found in New Zealand, and in 1861 the Otago district became a large producer. Since then immense developments have taken place. Besides California, Montana, Arizona, Colorado, Nevada, Idaho, and others of the United States have furnished, and still furnish large supplies, and Alaska must also be added. British Columbia is an important source, both alluvial and quartz mining being followed. Canada has also entered the lists as a gold-producer, and the phenomenal discoveries of rich alluvial deposits in the Klondike region in the Yukon basin still furnish excitement. The rich finds in Western Australia, in the Calgoorlie and Coolgardie districts, have recently placed that colony in the front rank as a gold-producer, while Victoria, South Australia, and New South Wales have long been large gold-producing countries. In Victoria much energy in the development, more specially of "deep lead" mining is being put forth. The Witwatersrand district of the Transvaal has sprung into importance since 1886, and Johannesburg is now perhaps the largest gold-mining center of the world. Russia is also an important producer, the gold being obtained beyond the Ural mountains. India also produces a considerable amount. Of the prospective gold fields the most likely are British Guiana, the hinterland of the Gold Coast, certain parts of China, and possibly East Africa.

The following table shows the production of gold in the United States in the calendar year 1901.

Alabama	$ 3,900
Alaska	6,904,400
Arizona	4,193,400
California	15,730,700
Colorado	29,000,000
Georgia	144,900
Idaho	2,273,900
Maryland	200
Michigan	29,000
Missouri	700
Montana	5,023,300
Nevada	3,000,000
New Mexico	832,900
North Carolina	65,800
Oregon	1,777,800
South Carolina	120,900
South Dakota	6,601,800
Tennessee	200
Texas	1,100
Utah	3,824,300
Virginia	7,400
Washington	620,200
Wyoming	62,000
Total	$80,218,800
British Klondike	17,595,400

Gold Beating, the art of hammering gold into leaves of extreme thinness. For this purpose pure gold is alloyed with small quantities of other metals according to the color required.

Gold Coast Colony, a British crown colony on the coast of West Africa. Coast line about 350 miles; area about 40,000 square miles; pop. estimated, 1,473,882, of whom about 500 are Europeans. The products are chiefly palm oil, gold, palm kernels, rubber, timber, etc. Chief town, Akkra; pop. 16,267. The government includes a governor, an executive council, and a legislative council of nine, none of whom are elected.

Gold Cure, a medicine for the treatment of the liquor, opium, and tobacco habits.

Golden Age, in mythological history, the earliest period of almost all nations, in which those then existing were supposed to live in perfect innocence and the enjoyment of ever pleasure, and when the earth produce all things necessary for their suppor comfort, or enjoyment in the fulles abundance, and all animals were a peace with each other. The Egyptians believed in successive conflagrations and deluges occurring at uncertain intervals. These were designe by the gods to purify the earth fron guilt. After each of these judgment man was again so regenerated as t live for a time in a state of virtu and happiness, after which degenerac again established itself, continuall gaining strength till the next catastrophe.

Golden Beetle, the name popularly given to many beetles. None are o large size, but many are distinguishe by their metallic splendor of colo

Golden Bull, a bull having golden seal, issued by the German emperor, Charles IV., at the Diet of Nuremberg in 1356, and which became th fundamental law of the empire ove which he ruled. Other bulls have als been called golden for a similar reason

Golden Calf, cast by Aaron fron the earrings of the people, while th Israelites were encamped at the foo of Sinai, and Moses was absent on th Mount. Ages after, Jeroboam, kin of Israel, set up two idols in the forn of a calf, the one in Dan and the othe in Bethel.

Golden-crested Wren, Golden-crested Regulus, or **Kinglet,** a beautiful bird, distinguished by an orange crest. It is the smallest o British birds, being only about 3½ inches in length. The most usua haunts of the golden-crested wren are tall trees, particularly the oak, the yew, and the various species of pine and fir.

Golden Eagle, or **Ring-tailed Eagle,** a North American bird. It is 32 to 40 inches long, and the wing 35. The head and neck behind are light-brownish fulvous, the tail at base white, terminal portion glossy black, and all other parts purplish-brown. It has great power of flight, but not the speed of many of the falcons and hawks. The nest of the golden eagle is placed on a shelf of a rugged and generally inaccessible precipice. It is flat and very large, and consists of dry sticks. The golden

gle preys on fawns, hares, wild tur-
ys, and other large birds. It does
t attain its full beauty of plumage
l the 4th year. The so-called ring-
iled eagle is the golden eagle before
has reached maturity. The Euro-
an golden eagle is so nearly like the
merican one, that there is a question
hether it is not the same species.

Golden-eye Fly, or **Lacewing**
ly, a neuropterous insect, pale green,
ith long thread-like antennæ, long
uze-like wings, and brilliant golden
es. Its flight is feeble. The length,
om the tip of the antennæ to the tip
the wings, is almost 1½ inches.

Golden Gate, a channel two miles
ide, forming the entrance to the Bay
San Francisco, and washing the N.
ore of the peninsula on which San
rancisco is built. It is defended by
ort Point, at the N. W. extremity of
e peninsula, and by a fort on Al-
traz Island, inside the entrance.

Golden Horde, originally the
me of a powerful Mongol tribe, but
terward extended to all the followers
Genghis Khan, and of Batu, his
andson, who invaded Europe in the
th century. They founded the em-
re of the Kiptshaks, or the Golden
orde, which extended from the banks
the Dniester to the Ural, and from
e Black Sea and the Caspian to the
outh of the Kama and the sources
the Khoper. This empire lasted
l toward the close of the 15th cen-
ry, when it was overthrown by
an III.

Golden Horn, the harbor of Con-
antinople, an inlet of the Bosporus,
called from its shape and beauty.

Golden Legend, a work written
James de Voragine, Archbishop of
enoa, in the end of the 13th century.
is a collection of lives of saints, and
scriptions and histories of festivals.
translation of it was made and
inted by Caxton in 1483. Longfel-
w made a portion of it popular by
s poem of the same name.

Goldenrod, a genus closely allied
aster. Most belong to North Amer-
a, where their bright coloring light-
s up the autumn scenery. The
aves of a fragrant North American
ecies have been used as a substitute
r tea. They are mildly astringent
d tonic.

Golden Rose, a rose of gold, or gilded, supposed to represent by its gold, its odor, and its balm, the Godhead, the body, and the soul of the Redeemer. It was sent at intervals by the Pope to sovereigns supposed to be more loyal than others to the Holy See.

Golden Rule, a rule, so called on account of its excellent use in arithmetic, and especially in ordinary calculations, by which numbers are found in certain proportions — viz., having three numbers given to find a fourth number in proportion. In morals, the rule laid down by Jesus in the Sermon on the Mount, and stated by Him to be the law and the prophets — i. e., a summary of their teaching: "Therefore all things whatsoever ye would that men should do to you, do you even so to them" (Matt. vii: 12).

Golden State, California, so named on account of its rich auriferous deposits.

Golden Wedding, the 50th anniversary of a wedding, which is usually observed with more than ordinary festivity. The presents given to the couple should all be of gold.

Goldfinch, a well-known bird. Bill pale horn colored, the tip black, the circumference at its base crimson, nape of the neck white; the top of the head, carpal portions of the wing, the smaller wing coverts, and part of the surface of the primaries black; back and rump dusky brown, greater wing coverts, and part of the expanse of the others, gamboge yellow; under surface of the body dull white. It feeds on the seeds of thistles and other plants. It sings very sweetly.

Goldfish, the trivial name of a beautiful species of carp, found in the fresh waters of China. It is greenish in color in the natural state, the golden yellow color being found only in domesticated specimens, and retained by artificial selection. These fishes are reared by the Chinese in small ponds, in basins, or porcelain vessels, and kept for ornament. They are now distributed over nearly all the civilized parts of the world, but in large ponds they readily revert to the color of the original stock.

Gold Lace, a kind of lace made of gold wire, flattened between two polished steel rollers, into a ribbon which is twisted round a core of silk. The "gold wire" used in the manufacture of gold thread is nearly always in India, where a great deal is made, composed of pure silver with a thin coating of gold. Gold wire for thread is generally drawn down to a size measuring 1,100 to 1,400 yards to the ounce of metal. Finer sizes reach the length of 1,800 to 2,000 yards to the ounce, and to attain this fineness the wire is drawn through perforated gems, such as diamonds or rubies.

The only difference between gold and silver thread is that the thin coating of gold is wanting on the latter. Gold thread is used in the manufacture of military lace. This, however, is a woven substance and not true lace; but some real lace is made both of gold and silver thread. Both kinds of thread are also used for facings of liveries, and for ecclesiastical robes, altar cloths, and banners. These and other fabrics are either embroidered or woven, but often only in part, with the thread. Much of the "gold thread" used for theatrical dresses and decorations has only a covering of Dutch metal and the "silver thread" in these is spun with a covering of a cheap white alloy, having a mere film of silver on the surface.

Goldman, Emma, an anarchist; born in Russia about 1868; emigrated to the United States and joined various anarchist societies; was arrested several times, and imprisoned for a year in New York city because of her teachings.

Goldmark, Karl, an Austro-Hungarian composer; born of Jewish parents in Keszthely, Hungary, May 18, 1832. He resided in Vienna. He became known in the United States by his operas, "The Queen of Sheba" and "Merlin," which was performed for the first time on any stage at the Metropolitan Opera House, New York, in 1887, and by very effective overtures. Picturesque originality and very skillful orchestration are Goldmark's best features.

Gold Mining, the process of extracting gold from the earth.

The metal occurs in (1) alluvial deposits or "placers." These are deposits of gravel, sand, clay, or loam,
consisting of the debris of weather
rocks, generally transported by ru
ning water from hillsides to valle
and plains. They mark and follo
the courses of existing rivers or of ri
ers belonging to former ages. Gold
found in them in all degrees of coars
ness, from minute specks or "colors
to masses weighing many ounces.

These larger masses of gold ha
usually a more or less rugged ar
lumpy exterior, and are described
"nuggets." The largest usually occu
near the source from which the gold
the alluvium has been derived. Th
source almost always consists of vei
of quartz, or other material, occurri
in one of the older rocks. Alluvial d
posits vary in character from pi
clay to coarse gravel. The gravel
usually loose, but sometimes in work
ing the deposits intervening layers a
met with which are cemented togethe
These are known as "false bottoms
River sands also frequently contai
gold. Alluvial deposits are often ver
rich, particularly in nuggets. This
largely due to the force of the wate
carrying forward the light earthy ma
terial, while the larger and heavie
particles, owing to their greater re
sistance, accumulate nearer the sourc

Goldoni, Carlo, a celebrated Ita
ian writer of comedies; born in Venic
Italy, Feb. 25, 1707. He became read
er and master of the Italian languag
to the daughters of Louis XV.; an
received latterly a pension of 3,60
livres. At the breaking out of th
revolution the poet lost his pensio
and the decree of the National Conver
tion of Jan. 7, 1793, restoring it an
making up the arrears, found him a
ready in the arms of death. Hi
widow received the arrears and a per
sion for herself. Many of his piece
still appear on the stage. He died i
Paris, France, Jan. 6, 1793.

Goldsborough, Louis Male
sherbes, an American naval officer
born in Washington, D. C., Feb. 1
1805. He distinguished himself i
1827 by rescuing the English bri
"Comet" from a Greek pirate whos
men numbered five times his own. I
September, 1861, he commanded th
North Atlantic blockading squadro
and gave the advice which resulted i
the Burnside expedition and the cap
ture of Roanoke Island. He becam

ar-admiral July 16, 1862, and died eb. 20, 1887.

Goldschmidt, Madame, maiden me Jenny Lind, a famous Swedish calist; born in Stockholm, Sweden, t. 6, 1820. At 3 years of age she uld sing correctly any piece she had ce heard, and at 9 she was placed der Croelius, a famous teacher of usic. Later she studied in Paris and 1844 she went to Dresden, and aft- ward to Frankfort, Cologne, Vienna, d London. She visited New York 1850, under the auspices of P. T. arnum, and was enthusiastically re- ived, but dissolved the engagement ematurely in 1851, was married to . Otto Goldschmidt, a skillful pian- t and conductor, and retired from the age. She reappeared in 1855, in 61, in 1863, and in 1880, for a lim- ed period. She was Professor of nging at the Royal College of Music, 83–1886. She died in Wynd's oint, Malvern, England, Nov. 2, 1887.

Goldschmidt, Meier Aaron, a anish novelist; born of Jewish par- ts, in Vordingborg, Oct. 26, 1819. 1840 he founded what became the ost famous of Danish newspapers, The Corsair," celebrated for its brill- nt wit and audacious satire. His yle is said to be the most graceful in e language. He died in Copenhagen ug. 15, 1887.

Goldsmith, Oliver, a British au- or; born in Pallas, Longford, Ire- nd, where his father, the Rev. harles Goldsmith, held the living of ilkenny West in connection with the stablished Church, Nov. 10, 1728. In une, 1744, he was entered as a sizar Trinity College, Dublin. In 1749, ortly after his father's death, he left ublin, and was advised by an uncle prepare for holy orders. When the equisite two years of probation were ver, Goldsmith made application to e Bishop of Elphin, but his applica- on was refused. He then became ator in a family, but soon lost his sit- ation on account of a dispute with e master of the house over a game f cards.

After this episode he thought of ailing for America, but after taking ut his passage allowed the vessel to et sail without him. The same uncle ho had given him assistance before ow gave him £50 to go to Dublin to study law, but he had scarcely arrived in the city when he lost the whole sum in gaming. In spite of his repeated imprudences he was once more succored by his uncle, who supplied him with means to go to Edinburgh to study medicine. Here he remained 18 months, during which he acquired some slight knowledge of chemistry and natural history. At the end of this period he removed to Leyden, again at the expense of his uncle. After studying in that university for about a year he left it in February, 1755, and with only one clean shirt and no money in his pocket, to make the tour of Europe on foot, and actually traveled in this way through Flanders, part of France, Germany, Switzerland, and Italy. It was probably at Padua that he took a medical degree, as he remained there six months; but his uncle dying while he was in Italy he was again obliged to travel on foot to England, and reached London in 1756 with a few pence in his pocket. The story of George Primrose in the "Vicar of Wakefield" has been supposed to be autobiographical and perhaps too much stress has been laid upon this theory by those who have attempted to construct a narrative of Goldsmith's travels. Certainly we owe many lines in the "Traveler" to the poet's own experiences.

A fellow collegian, Dr. Sleigh, assisted him and recommended him as an usher to a school. He remained but a short time in this situation and then took lodgings in London to follow the profession of an author. In 1764 he appeared as a poet by the publication of his "Traveler." The celebrity which this poem procured its author was the cause of his introduction to the most eminent literary characters of the day. In 1766 appeared his well-known "Vicar of Wakefield," which at once secured merited applause. His poetical fame was greatly enhanced by the publication of his "Deserted Village" in 1770, for which he could hardy be induced to take the proffered recompense of £100 ($500), till satisfied that the profits of the bookseller could afford it. In debt for upward of $10,000, and more truly lamented than any literary man of his generation, he died in London, England, April 4, 1774.

Golf, a game of ball, in which the bats are loaded sticks with a little curve at the end for striking the ball on the ground, or elevated on a little mound or tee as it is called in the language of the game. Golf clubs are of varying weights and forms, according to the taste and requirements of the players. The balls are made of composition, and when skillfully driven seem to fly like bullets through the air, making a free field absolutely necessary to the safety of players.

The chief requisites of the game are thus set forth by Thomas Bendelow, who did much to make it popular in the United States: The prime necessity for golf is plenty of room. The course, called "links," should not be less than 3 miles round nor more than 5. Throughout it are distributed 18 artificial holes at any distance from 1 to 500 yards apart. The holes are 4½ inches in diameter, and each is surrounded with a "putting green," a space 60 feet square and as smooth as possible. The other requisites are two small balls about two inches in diameter and made of gutta-percha, and a number of "clubs" adapted to the various contingencies likely to arise. The object of the game is to knock the ball with the sticks into the series of holes in the least number of strokes. The game can be played either by two persons, each having his own ball and counting by holes, not by the strokes taken for the whole round — this is called singles, or foursomes, two persons playing against another two, the partners playing alternate strokes, each side having its own ball. At the beginning of the game the player puts a little pat of sand down on the "teeing ground" (the pat is the "tee"), sets the ball on the top, and strikes it as far as he can in the direction of the first hole. After that, until he holes the ball, he must play it strictly from the place it happens to be. Here is where the bunkers come in, for a ball may land in a ditch or under a bank, where it may take him many strokes to get it into open ground again, and he may be called upon to use many different kinds of clubs, according to the nature of the ground and his distance from his object. The object of the putting green which surrounds the hole is to give the player a smooth space, e abling him to aim with accuracy. Ha ing "holed" his ball, the player tal it out, tees it again, and starts o for the next hole. A good drivi stroke from a tee would be 200 yar But a record of 280 yards has be made at St. Andrews, Scotland.

There are two styles of clubs, t wood and the iron, the latter havi the head shod with steel. Altogeth there are 19 shapes of clubs, but s are usually sufficient for a ma needs. The different clubs are us under different circumstances; for e ample, a putter for playing sho strokes on the putting green; a cle for drives; the driving iron when it advisable to make a long drive, li ing the ball moderately high, the li ing iron when it is required to pit the ball very high; the niblic f raising a ball out of ruts; the driv for long drives from a tee.

Goliath, a giant of Gath slain David (I Sam. xvii.). His height w "six cubits and a span," which, ta ing the cubit at 21 inches, would ma him a little over 11 feet. T Septuagint and Josephus read, "fo cubits and a span."

Goliath Beetle, a genus of tro cal beetles. They are distinguished their large size, by the horny process on the heads of the males, and by t toothed lower jaws or maxillæ. Seve species frequent tropical and Sou Africa.

Golomynka, a remarkable fi found only in Lake Baikal. It about a foot long, is destitute of scal and is very soft, its whole substan abounding in oil, which is obtain from it by pressure. It may be most said to melt into oil on the a plication of fire. It is never eaten.

Goloshes. A term formerly a plied to a kind of wooden clogs. T name is now restricted to oversho now generally made of vulcanized dia-rubber.

Gomarites, the followers of Fra cis Gomar, who was born in Brug Jan. 30, 1563. Gomar was strong Calvinistic; was distinctly the lea of the Calvinistic opponents of Arm ius.

Gomato, or **Gomuti Palm,** species of trees found in the Moluc

d Philippines, which supplies abun-
nce of sugar. Palm sugar is gen-
ally obtained from the juice which
ws from different palms on wound-
; their spathes and adjacent parts.
is commonly known in India by the
me of jaggery. The juice of the
muti palm, when fermented, pro-
ces an intoxicating liquid or toddy.
om the trunk of this palm, when
austed of its saccharine juice, a
od deal of our commercial sago is
ained. A single tree will yield from
) to 200 pounds of sago. The juice
the fruit is very acrid. The stiff
ong fiber known under the name of
nmuti, or ejow fiber, is obtained
m the leaf-stalks, and is extensively
ed in the manufacture of cables and
rious kinds of ropes.

Gomes de Amorin, Francisco,
Portuguese poet and romance-writer;
n in Avelomar, Minho, Aug. 13,
27. In the revolutionary move-
nts of his country he employed his
etic talent in the patriotic cause,
d won a European reputation as
ng in the first rank of modern
rtuguese poets. He also wrote
ys and romances. He died in Lis-
in November 1891 or 1892.

Gomez, Maximo, a Cuban mili-
y officer; born in Bani, San Do-
ngo, in 1838; served as a lieutenant
cavalry in the last Spanish army
t to occupy that island. During
war with Haiti he won distinction
the battle of San Tome, in which ac-
n at the head of 20 men he con-
ered a much superior number.
en the freedom of San Domingo
s declared he accompanied the
anish force to Cuba; but later,
en General Villar maltreated some
ban refugees, he became angry, and
er personally assaulting that officer
the Spanish army. In 1868 he
ed the Cuban insurrection known
the Ten Years' War. He aided in
capture of Jugnani, Bayamo,
nas, and Holguin, and was a lead-
actor in many other successful en-
ements; was promoted Major-Gen-
l and later succeeded General
ramonte as commander-in-chief. At
beginning of the war of 1895–1898
again took up arms with the Cu-
s and fought with marked distinc-
n till the Americans occupied Cuba.
Feb. 25, 1899, after marching
through Havana with 2,500 of his soldiers, he was given a reception and banquet in that city by the United States military authorities. Later he was of invaluable service to General Brooke, the American governor-general, in the work of reconstruction on the island. In 1900–1901 he was conspicuously mentioned for the presidency of the Cuban republic.

Gonaives, a seaport of Haiti, on a beautiful bay on the W. coast, with an excellent harbor, 65 miles N. N. W. of Port au Prince. It exports coffee, cotton, logwood, and hides.

Goncourt, Edmond and **Jules de,** French novelists and brothers; the former born in Nancy, France, May 26, 1822, the latter in Paris, Dec. 17, 1830. They became celebrated as the joint authors of a number of famous writings, including "History of the French Society During the Revolution and Under the Directory" (1865). Jules died in Auteuil, June 20, 1870.

Gondar, the capital of Amhara in Abyssinia, on a basaltic hill 23 miles N. of Lake Tzana. It was formerly the residence of the emperor, and at one time had about 50,000 inhabitants. The hill is crowned by the ruin of the old castle, built by Indian architects under Portuguese direction; burned by Theodore in 1867, and now left to the bats and hyenas.

Gondola, a Venetian boat. A gondola of middle size is 30 feet long, 4 feet beam, and is rowed by one man, known as a gondolier, standing at the stern and using one oar, or by two men, one at each end, each using a single oar. It has seats amidships, some of which have covers. In Venice, they are all painted black.

Gonds, a Dravidian people, the most important of the non-Ayran or aboriginal hill races of the Central Provinces of India. Today they number about 1,500,000, and, while the wilder tribes cling to the forest, the rest have made some advances in civilization. Most of the upper classes are of mixed blood, and many of the race have embraced Hinduism. Each village worships the three or four deities it knows best. Cholera and smallpox are deified by them, and the Gonds people the forest, the rivers, and every rock with evil spirits.

Gonfalon, or **Gonfanon,** a small flag fixed to the pole of a lance, with two or three streamers or tails. The object of the gonfalon was principally to render great people more conspicuous to their followers, and to terrify the horses of their adversaries.

Gonfalonier, a standard-bearer; the person intrusted with the public gonfalon in mediæval Italian cities.

Gong, a musical instrument used principally in the East. It is tambourine-shaped, a disk of thin bronze with an upturned flange forming a rim. Also a stationary bell, whose tongue is moved by a wire.

Gonsalvo, or **Gonzalo of Cordova, Hernandez D'Aquilar,** a Spanish general, called "The Great Captain"; born near Cordova, Spain, March 16, 1453. He was of noble family, and at an early age entered the army. He first distinguished himself in the great war of Ferdinand and Isabella with the Moors, which ended with the conquest of Granada in 1492. When Louis XII. renewed the invasion of Italy, Gonsalvo took command there, and after a temporary division of the country between France and Spain, he again expelled the French, established the Spanish rule, and was named viceroy of Naples. Through the jealousy of Ferdinand, and the calumnies of the courtiers, he was deprived of his office in 1507, when he retired to Granada, and died there Dec. 2, 1515.

Gonville and Caius College, a college of Cambridge University, England, founded in 1358 by Edmund Gonville, of Terrington, Norfolk. In 1558 Dr. Caius obtained the royal charter by which all the former foundations were confirmed and his own foundation was established. By this charter the college was thenceforth to be called Gonville and Caius College.

Gonzaga, a princely family which gave a line of dukes to Mantua and Montferrat. The sway of this race over Mantua extended over a period of three centuries, and many of its members were magnificent promoters and cultivators of art, science, and literature.

Gonzalez, Manuel, a Mexican military officer; born near Matamoros about 1833; fought with distinction in the war against the French a Maximilian. He participated wi Diaz in various revolts; was his sec tary of war in 1877–1880; and su ceeded him as president in 1880. Aft his retirement he was governor Guanajuato. He died in Mexico Ci May 8, 1893.

Good, James Isaac, an Americ clergyman and author of historical ligious works; born in York, Pa., D 31, 1850; was graduated at Lafaye College in 1872, and later at Uni Theological Seminary. In 1893 was made Professor of Dogmatics a Pastoral Theology in Ursinus C lege, Philadelphia, Pa.

Goodale, Elaine, Mrs. Eastma an American poet; born in Mt. Was ington, Mass., Oct. 9, 1863. In 18 she visited the Great Sioux reser tion, reporting her views to New Yo and Boston journals. In 1891 s married Dr. Charles A. Eastman, full-blooded Sioux Indian, in N York city. She was divorced fr him a few years later.

Goodale, George Lincoln, American botanist; born in Saco, M Aug. 3, 1839. He was graduated Amherst in 1860, and at the Harva Medical School in 1863. For so time he was a lecturer in medic schools in Maine. In 1871 he was a pointed Professor of Natural Scienc in Bowdoin College. After 1872 was connected with Harvard Unive sity, at first as instructor and lat as Professor of Botany.

Goodall, Frederick, an Engli painter; born in London, Sept. 1 1822. He was only 17 years of a when he exhibited his first picture the Royal Academy, "French Soldie Playing Cards in a Cabaret." A vi to Venice and Egypt in 1857–1859 l him to turn his attention to Itali and Oriental subjects. He was elec ed a Royal Academician in 1863.

Goode, George Brown, an Ame ican naturalist; born in New Alban Ind., Feb. 13, 1851: was graduated Wesleyan University in 1870. He b came connected with the scienti staff of the United States Nation Museum in 1873; was made assista secretary of the Smithsonian Instit tion in 1887. He died in Washin ton, D. C., Sept. 6, 1896.

Good Friday, the name applied to ne Friday before Easter, sacred as ommemorating the crucifixion of our ord.

Good Hope, Cape of, the cape at ne S. end of the narrow peninsula unning S. from Cape Town, South frica. The name is a translation of ne Portuguese name given by King ohn II., of Portugal, because its oubling in 1487 by Bartholomew Diaz ho called it Stormy Cape, afforded ood hope of the discovery of the long-ought-for sea-way to India.

Goodrich, Charles Augustus, an merican clergyman and author, rother of Samuel Goodrich; born in idgefield, Conn., in 1790. He was raduated at Yale in 1812. He held ne pastorates of Congregational hurches in Worcester, Mass., and erlin and Hartford, Conn. He died Hartford, Conn., Jan. 4, 1862.

Goodrich, Frank Bott, pseudoym Dick Tinto, an American author; orn in Boston, Mass., Dec. 14, 1826; raduated at Harvard in 1845. His aris letters to the New York Times" first brought him into noce. He died in Morristown, N. J., larch 15, 1894.

Goodrich, Samuel Griswold, seudonym Peter Parley, an American ıthor; born in Ridgefield, Conn., ug. 19, 1793. He edited the Token," published in Boston from 328 till 1842. From 1841 till 1854 he lited "Merry's Museum and Parley's agazine." His "Peter Parley" ooks won great popularity, evidenced the fact that the pen-name was atched to more than 70 spurious volnes. He died in New York city, ay 9, 1860.

Goods and Chattels, the legal ıd popular denomination for personal roperty as distinguished from things al, or lands, tenements, or hereditaents.

Good Templars, Independent rder of, an association organized Utica, N. Y., in 1851, by Daniel ady and others; first name Good emplars merely. The Grand Lodge New York was instituted Aug. 11, 352, and the order spread into many her States and Canada. No restricon was placed on membership on ccount of color or sex. It has no beneficiary system. Its platform consists of total abstinence from all intoxicating liquors as a beverage, no license, prohibition of manufacture and sale, and the election of good men to enforce the laws. Its secrecy is guarded by signal raps and passwords. The motto of the order is "Faith, Hope, and Charity." It is an outgrowth of the Sons of Temperance.

Goodwill. (1) The custom of any trade or business; (2) the influence of the seller of any business to secure his successor the custom already existing; (3) the right or title to keep up and continue the business purchased from an outgoing tenant; (4) the money paid for such right or title.

Goodwin, Mrs. Maud Wilder, an American historical novelist; born in New York State in 1856.

Goodwin, William Watson, an American educator; born in Concord, Mass., May 9, 1851; was graduated at Harvard College in 1851; became Professor of Greek Literature in Harvard in 1860.

Goodwin Sands, dangerous sandbanks in the Strait of Dover, off the S. E. coast of Kent, England. The roadstead termed the Downs lies between them and the mainland. Length, about 10 miles.

Goodyear, Charles, an American inventor; born in New Haven, Conn., Dec. 29, 1800. He failed as an iron manufacturer in 1830, but in 1834 turned his attention to india-rubber, the manufactured products of which had hitherto proved failures because of their liability to soften in the heat of summer. Amid poverty and ridicule, sometimes in prison for debt, he patiently pursued the experiments which, after he had obtained a fresh idea from his assistant Hayward's use of sulphur, ended, in 1844, in the issue of his patent for vulcanized rubber. This process he afterward perfected, discovering new uses to which his product could be applied, till it required 60 patents to secure his inventions. He received medals at London (1851) and Paris (1855), as well as the cross of the Legion of Honor; though kept in continual litigation and consequent poverty by shameless infringements of his rights, he yet lived to see his material applied to nearly 500 uses, and to give employment, in the United States, England, France, and Germany, to 60,000 persons. He died in New York city, July 1, 1860.

Goorkhas, or **Gurkhas,** the dominant race in Nepal, descended from Hindu immigrants and claiming a Rajput origin. They overran the Khatmandu valley, and extended their power over Nepal, in 1767–1768. The Goorkhas, who are a short, thick-set race, are brave and faithful soldiers, and lent valuable aid to the British in the suppression of the mutiny and subsequently.

Goosander, a web-footed bird in the duck family. The adult male, which measures 26 inches in length, has the head and upper part of the neck of a rich shining green, the feathers of the crown and back of the head elongated, the back black and gray, the wings black and white, the breast and belly of a delicate reddish-buff color. The bill, legs, and feet are orange-red. The female, which is rather smaller, has the head reddish-brown, with a less decided tuft than the male, and much grayer plumage. The goosander is a native of the Arctic regions, extending into the temperate parts of America, Europe and Asia.

GOOSANDER.

Goose, the name of a well-known family of natatorial birds. The domestic goose is believed to have descended from the greylag goose. It is valued for the table and on account of its quills and fine soft feathers. The body is large and heavy, the neck long, the head small, and the bill conical, the wings long and powerful, the feet somewhat long, with small toes. summer the wild goose inhabits t polar regions, migrating S. in flo which is of coarse grass, and situa on the approach of winter. The ne in marshy places, is large; the e several.

WILD GOOSE.

Gooseberry, a succulent ber very wholesome and agreeable, of rious colors — whitish, yellow, gre and red. It is a popular fruit preserving, and is extensively cul vated. New varieties are obtain from the seeds, and the same kind fr cuttings.

Gooseberry Caterpillar, a na applied to the larvæ of two very d ferent insects, both injurious to goo berry and currant bushes.

Goosefish, a common name in t United States for the Angler Fi The American goosefish grows to length of 4 to 5 feet, and weighs fr 15 to 170 pounds. It is hideous in pearance (being also known as " w gab" and "devilfish"), and has most voracious appetite, preying differently on all kinds of fish, a eating occasionally fowls. It is pr tically useless.

Gopher, a name given by the ea French settlers in the United Sta to various animals which honeyco the ground by burrowing in it. Illinois and Canada it was given to gray burrowing squirrel, in Wiscon to a striped squirrel, and in Misso a burrowing pouched rat. All these e mammals; but in Georgia the rm is applied to a snake, and in orida to a turtle.

GOPHER.

Gopher Wood, the wood of which ah's ark was directed to be made. rious attempts have been made to ntify the tree. The most probable w is that it was the cypress.

Gopher State, a name sometimes en to Minnesota.

Goral, an antelope found in the malaya Mountains. It is about the e of the common goat.

Gordian Knot, a knot tied by rdius in the rope which bound the ke of his chariot to the whippletree such an artful manner that the ends the cord could not be perceived. intricate was it that the report at abroad that the empire of Asia s promised by the oracle to him o could untie it. Alexander the eat, wishing to inspire his soldiers h courage and his enemies with the ief that he was born to conquer a, cut the knot with his sword, and claimed to have fulfilled the oracle. nce the term "gordian knot" is d for any apparently inextricable iculty or deadlock; and to "cut gordian knot" is equivalent to reving or solving a difficulty by bold unusual measures.

ordius, in Greek legend, a Phrygpeasant, father of Midas, who raised to the Phrygian throne in ordance with an oracle which dered to its Phrygian consulters that r seditions would cease if they ted as king the first man they met, unted on a chariot, going to the ple of Zeus. This was Gordius, , to evince his gratitude, consered his chariot to Zeus, and fastd the pole with an ingenious knot.

Gordon, Family of, a celebrated Scottish historical house, the origin of which is still wrapped in a certain measure of obscurity. It is probable that the family came over to England with William the Conqueror. The earls of Sutherland, the barons of Lochinvar, the viscounts of Kenmure, and the earls of Aberdeen are all branches of the Gordon family. The title of Duke of Gordon became extinct in 1836, but was revived in 1875.

Gordon, Archibald D., an American dramatist; born in Ceylon, Oct. 11, 1848. He entered a publishing house in New York city in 1865, and subsequently became connected with New York and Chicago papers as dramatic critic. He died in Port Richmond, Staten Island, N. Y., Jan. 9, 1895.

Gordon, Armistead Churchill, an American poet; born in Albemarle co., Va., Dec. 20, 1855. After graduating from the University of Virginia he became a lawyer in Staunton, Va. In collaboration with Thomas Nelson Page he wrote a volume of verse, etc.

Gordon, Charles George, called "Chinese Gordon" and "Gordon Pasha," an English soldier; born in Woolwich, England, Jan. 28, 1833. He entered the Royal Engineers in 1852. From 1874 to 1879 he was governor of the Sudan under the khedive. In 1882 he was sent to withdraw the garrisons shut up in the Sudan by the insurgent mahdi. He was shut up in Khartum by the rebels, and gallantly held that town for a whole year. A British expeditionary force under Lord Wolesley was dispatched for his relief; an advance corps of which sighted Khartum Jan. 24, 1885, to find that the town had been treacherously betrayed into the hands of the mahdi two days before, and Gordon murdered. His character was marked by strong religious feelings, which latterly become so intensified as to make him somewhat of a religious enthusiast and fatalist.

Gordon, Charles William, a Canadian author; born in Indian Lands, Glengarry, Ont., Canada, in 1860. He was graduated at Toronto University in 1883 and at Knox College in 1887; was a missionary to Banff, etc., Rocky Mountains, 1890-1894. Pen name, Ralph Connor.

Gordon, John Brown, an American military officer; born in Upson co., Ga., Feb. 6, 1832; was graduated at the University of Georgia; admitted to the bar and began practice. When the Civil War broke out he was appointed a captain of infantry in the Confederate army; served with marked distinction throughout the war, during which he was wounded eight times; was promoted Brigadier-General in April, 1863, and later Major-General. In 1873 he was elected to the United States Senate and served in that body till 1880, when he resigned. In 1886–1897 he was governor of Georgia. On May 31, 1900, he was chosen commander-in-chief of the United Confederate Veterans. General Gordon is widely known as an orator on events of the Civil War.

Gordon, Sir John Watson, a Scottish portrait-painter, son of Captain Watson of the British navy; born in Edinburgh, Scotland, in 1788. In 1850 he was elected president of the Royal Scottish Academy and knighted, and in 1851 he became a London Royal Academician. Nearly every man of note in Scotland, besides not a few in England, sat to him for their portraits. He died in Edinburgh, June 1, 1864.

Gordon, Joseph Claybaugh, an American educator; born in Piqua, O., March 9, 1842; was graduated at Monmouth College, Ill., in 1866. He was the first instructor in oral education for the deaf in the United States; organizing the oral department in the Indiana Institution for the Deaf in 1869; was Professor of Mathematics and Chemistry in Gallaudet College, Washington, in 1873–1897; then became superintendent of the Illinois Institution for the Education of the Deaf.

Gordon, Lady Duff, an English author and translator, the only child of John Austin, the jurist; born in London, England, June 24, 1821. In 1840 she married Sir Alexander Duff Gordon. She died in Cairo, Egypt, July 14, 1869.

Gore, a triangular or wedge-shaped piece; as (1) a triangular piece sewed into a dress, a sail, etc., to widen it out at any part, a gusset; (2) an angular piece of planking used in fitting the skin of a vessel to the fram
(3) a triangular or pointed piece
land.

Gore, Charles, an English cle
man and author; born in 1853.
was a Fellow of Trinity College,
ford, and vicar of Radley, near Oxf
He is best known as the editor
"Lux Mundi," and author of the
say on "The Holy Spirit and Insp
tion" in that volume.

Goree, a small island in Fre
Senegal, lying immediately S. of C
Verde. It is almost entirely cove
by the town of Goree, an unheal
place, of some commercial importa

Gorgei, or **Gorgey, Arthur**
Hungarian general; born in Topo
county of Zips, Hungary, Jan.
1818. During the insurrection
Hungary (1848) he assumed the c
command of the Hungarian army,
in that position showed great milit
talents. Differences, however, a
between himself and the civil auth
ties; twice he was superseded in
command, and on resuming it
alternately victor and vanquished.
the resignation of the governor
council, Aug. 11, 1849, Kossuth m
him dictator in his place. Sho
after this, the Hungarian forces
down their arms. For this Go
has been branded as a traitor, tho
the state of affairs seemed despe
enough to warrant submission.
went to Klagenfurt, was afterward
lowed to leave on parole, and purs
his favorite study of chemistry
Pest. He has since been fully vi
cated from the charge of treachery.

Gorges, Sir Ferdinando, st
"the father of colonization in Am
ica"; born in Ashton, Somersetsh
England, about 1565. He foun
two Plymouth companies (1606–1
and 1620–1635) for acquiring
planting lands in New England,
in 1639 received from the king a ch
ter constituting him proprietor
Maine. He adhered to the king
the civil war, and died in 1647.
son neglected the province, which
nally placed itself under the juris
tion of Massachusetts, to which
ony Sir Ferdinando's grandson
his rights in 1677 for £1,250.

Gorgias, a celebrated Greek r
orician and sophist, of the time

ocrates; born in Leontini, Sicily, oout 485 B. C. He came to Athens ; ambassador from his native city in 27 B. C., subsequently settled in reece, and, becoming famous as a acher of eloquence, traveled from ace to place, acquiring wealth as ell as fame. He died in Larissa, hessaly, about 380 B. C.

Gorgon, in Greek mythology, one the three sisters, daughters of Phor- s and Ceto. Their names were heno, Euryale, and Medusa, all of hom were immortal except Medusa. ccording to the mythologists, their ir was entwined with serpents, their nds were brass; their body was cov- ed with impenetrable scales, and eir teeth were as long as the tusks a wild boar. They were so fright- l that they turned to stone all those whom they fixed their eyes. They ere conquered by Perseus. The head Medusa remained in his hands; d after he had finished all his la- rious expeditions he gave it to Min- va, who placed it on her ægis, with hich she turned into stone all such fixed their eyes upon it.

FEMALE GORILLA.

Gorilla, a celebrated anthropoid e, generally believed to come nearer an any known one to man. The ght is about 5 feet, almost the same as man. On the other hand, the greatest capacity of the gorilla's brain is only 34½ cubic inches, the least 23, against 62 in the least capacious human skull, and 114 in the greatest. The low facial angle also, and the abundant hair, with the extraordinary breadth of the chest, diminish the resemblance. The last-mentioned characteristic imparts to the animal a colossal strength. It is a native of Lower Guinea and the interior of equinoctial Africa.

Gorman, Arthur Pue, an American legislator; born in Howard co., Md., March 11, 1839. He started in life as a Senate page. After service in the Maryland legislature he was elected United States Senator in 1880, 1886, and 1892. His name has been prominent several times in connection with the Democratic nomination for the Presidency, and is again mentioned in 1903.

Gorostiza y Cepeda, Don Manuel Eduardo de, a Mexican diplomatist; born in Vera Cruz, Nov. 13, 1791. His father was Spanish governor of Mexico. He was made Mexican minister to England when independence was secured, and later had himself transferred to Paris, in which city he achieved his most enduring renown as a writer of plays. He died in Tacubaya, Oct. 23, 1851.

Gorres, Jakob Joseph von, a German author; born in Coblentz, Prussia, Jan. 25, 1776. He died in Munich, Jan. 29, 1848.

Gorringe, Henry H., an American naval officer; born of English parents in Barbadoes, W. I., Aug. 11, 1841; settled in the United States early in life; joined the Union navy in 1862, and served with the Mississippi squadron under Porter, taking a conspicuous part in nearly all of the important actions of that squadron; and was promoted lieutenant-commander in July, 1865. He is best remembered by his removal of the Egyptian obelisk (Cleopatra's Needle) which the khedive had presented to the United States, from Egypt to New York city, in the iron vessel "Dessoug." The total cost of transportation was $100,000, which was paid by the late William H. Vanderbilt. The obelisk arrived in New York harbor July 20, 1880, and was erected in Central Park, Jan. 23, 1881. Gorringe was the author of a "History of Egyptian Obelisks." He died in New York city, July 6, 1885.

Gortchakoff, Prince Alexander Michaelovitch, a Russian statesman; born in St. Petersburg, July 16, 1798. As Russian Minister of Foreign Affairs he declined to associate himself with France and Great Britain in their unfriendly attitude toward the United States. He was appointed chancellor in July, 1863. From this time till the ascendancy of Bismarck he was the most powerful minister in Europe. He was superseded by M. de Giers as minister for foreign affairs in March, 1882. After his retirement he left Russia for Baden-Baden, where he died March 1, 1883.

Gortchakoff, Prince Michael, a Russian general, cousin of the preceding; born in 1795. In 1855 he was appointed commander-in-chief in the Crimea and Southern Russia. Alexander II. appointed him governor of Poland in 1856, and he was engaged in carrying out the conciliatory policy of the czar when his death occurred in Warsaw, May 30, 1861.

Goschen, George Joachim, an English statesman; born in London, England, Aug. 10, 1831. When Gladstone became prime minister in 1868, Goschen took office as president of the poor-law board, but three years later became the head of the admiralty, which post he retained till the fall of the Gladstone ministry in 1874. In 1878 he represented Great Britain at the International Monetary Conference held at Paris, and two years afterward, as ambassador extraordinary to the Porte, enforced on Turkey the fulfilment toward Greece of the treaty of Berlin. He strenuously opposed home rule; in 1887–1892 was Unionist Chancellor of the Exchequer, and in 1888 converted part of the national debt. In 1895–1896, as First Lord of the Admiralty, he made provision for increasing the navy.

Goshawk, or **Goshauk** (properly goose-hawk), a bird of prey. It is brown above, white underneath, barred across with brown, with five browner bands on the tail; the eyelids whitish. When immature it has dots instead of bars. The female is 24 or 25 inc
long, the male almost one-third l
It pursues its prey directly, instead
swooping down on it from above lik
falcon.

GOSHAWK.

Goshen, that part of ancient Eg
which Pharaoh presented to the
dred of Joseph when they came to
journ in that country.

Goslar, an ancient town of H
over, Prussia, on the N. slope of
Harz Mountains, 27 miles S. E.
Hildesheim. It was at one time a
imperial city, and the residence of
emperors; has several noteworthy
buildings, as the tower called
"Zwinger," with walls 23 feet th
the late Romanesque Church Neuw
of the 12th century, and the Fran
berger Church (1108, restored 18
both with ancient frescoes; the
peror's house, built in 1050 by He
III., the dwelling-house of the em
ors till the middle of the 13th cent
the meeting place of more than 20
perial diets, restored in 1867–18
the town house, built in 1136–11
and the Kaiserworth, an old buil
containing statues of eight emper
In 1802 it ceased to be a free impe
town and fell to Prussia, to who
again returned in 1866, after ha
in the meantime belonged to Westp

ı (from 1807) and Hanover (from
316). Here were born Henry IV.
ıd Marshal Saxe.

Gospellers, a word used with three
fferent designations: (1) A term
pplied by the Roman Catholics to
ose Reformers who taught the peo-
e the words of Scripture in their
vn vulgar tongue, as Wyclif and his
llowers. (2) A class of Antino-
ians,' about the period of the Refor-
ation, who drew "strange inferen-
s" from the doctrine of predestina-
on. (3) The priest who reads the
ospel in the communion service of the
urch of England, standing on the
. side of the altar.

Gospel. In the New Testament it
notes primarily the glad tidings re-
ecting the Messiah and His kingdom
-this was emphatically the Gospel
Anglo-Saxon, godspell, good tidings).
was quite naturally employed as a
mmon title for the historical ac-
unts which record the facts that con-
itute the basis of Christianity.

It may be fairly said that the gen-
neness of the four narratives writ-
n by Matthew, Mark, Luke, and
hn rests on better evidence than that
any other ancient writings. They
ere all composed in the latter half
the 1st century; those of Matthew
d Mark some years before the de-
ruction of Jerusalem; that of Luke
out the year 64; and that of St.
hn about the close of the century.
efore the end of the 2d century we
ve abundant evidence that the four
ospels, as one collection, were gener-
ly used and accepted. They seem to
ve been viewed as so many original
d independent sources, each one as
uch so as the others. The critical
irit of modern times has refused to
lt at this point; it has sought to
t at, so to speak, the genealogy of
e several Gospels with their differ-
t degrees of relationship. Each of
e four Gospels has in turn been
sumed by different critics to be the
st out of which the others arose;
d the theory has been more than
ce propounded of some prior, more
rictly original document, no longer
tant, which formed the common ba-
s of them all. The fourth Gospel,
the narrative coincides with that of
e other three in a few passages only,
not drawn into the discussion, and
the received explanation is the only satisfactory one with respect to it, namely, that John, writing last, had seen the other Gospels, and purposely abstained from writing anew what had been sufficiently recorded. Another conjecture is that the Gospels sprang out of a common oral tradition. According to this view of the origin of the Gospels, that of Mark, if not the oldest in composition, is yet probably the most direct and primitive in form; it is the testimony delivered by Peter, possibly with little alteration. A comparison of the three synoptical Gospels (those of Matthew, Mark, and Luke) yields some interesting results. If we suppose the history they contain to be divided into sections in 42 of these all the 3 narratives coincide; 12 more are given by Matthew and Mark only, 5 by Mark and Luke only, and 14 by Matthew and Luke. To these must be added five peculiar to Matthew, two to Mark, and nine to Luke. But this applies only to general coincidence as to the facts narrated; the number of passages either verbally the same, or coinciding in the use of many of the same words, is much smaller.

Several biographies of Jesus and the holy family written by unknown authors of the 2d, 3d, and later centuries are known as Apocryphal Gospels. They have no historical or doctrinal value whatever. The titles of the best known of these are: The Gospel of James, the Gospel of Joseph the Carpenter, the Gospel of Thomas, the Gospel of Nicodemus, the Acts of Pilate, and his Letter to Tiberias, etc.

Gossamer, a light filamentous substance which often fills the atmosphere to a remarkable degree during fine weather in the latter part of autumn, or is spread over the whole face of the ground, stretching from leaf to leaf, and from plant to plant, loaded with entangled dew-drops, which glisten and sparkle in the sunshine. It is now known to be produced by small spiders, not by any single species, but by several, not improbably many, species; while it is also said to be produced by young and not by mature spiders.

Gosse, Edmund, an English author; son of Philip Henry Gosse; born in London, Sept. 21, 1849. He has written several volumes of history.

Gosse, Philip Henry, an English naturalist; born in Worcester, England, April 10, 1810. In 1827 he went to Newfoundland as a clerk, and was afterward in turn farmer in Canada, schoolmaster in Alabama, and professional naturalist in Jamaica. He was elected a Fellow of the Royal Society in 1856. He spent the last 30 years of his life in Torquay, a retired South Devon village, where he died Aug. 23, 1888.

Goszczynski, Severin, a Polish poet; born in Ilinze, in the Ukraine, in 1803. In the struggle for independence in 1830 he achieved brilliant feats of arms, and composed national odes that spread his fame throughout Europe. He died in Lemberg, Feb. 25, 1875.

Got, Francois Jules Edmond, a French actor; born in Lignerolles, Orne, Oct. 1, 1822. In 1866, with the emperor's special permission, he appeared at the Odeon as Andre Lagarde in Augier's "Contagion," and organized a company to carry the play through France. He played repeatedly in London. In 1881 he was decorated with the cross of the Legion of Honor.

Gotha, a town of Germany, alternately with Coburg the capital of the duchy of Saxe-Coburg-Gotha, 31 miles W. by S. of Weimar, on the N. outskirts of the Thuringian Forest. It is a handsome, well-built town, with fine parks. The principal public building is the castle of Friedenstein, built in 1648, 78 feet above the town; it contains a library of 200,000 volumes and 6,000 MSS., and a very valuable numismatic collection.

Goth, name of an ancient race belonging to the Teutones, who originally occupied a great portion of European and Asiatic Russia.

Gotham, a parish of Nottinghamshire, England. The people here were famed for their stupidity and simplicity, which obtained for them the satirical appellation of the "wise men of Gotham." Also a colloquial term for the city of New York.

Gothenburg System, The, a licensing system, under which in Gothenburg, Sweden, the public-house licenses are granted to a company, which, after paying the expenses of
management with 6 per cent. ann
interest on the shareholders' capi
makes over the profits to the to
treasury. This plan has been in fo
since 1865.

Gothic, a term sometimes used
distinguish mediæval from classi
architecture. In a more limited se
it comprehends those styles only
mediæval architecture which are ch
acterized by the pointed arch. In
narrower sense, Gothic architect
dates from the middle of the 12th c
tury; in the wider, it includes as w
Anglo-Saxon, which prevailed from
close of the 6th to the middle of
11th century, and also Anglo-Norm
which flourished during the succeed
100 years. Gothic architecture
tained its perfection in the Decora
English period. In the early part
the 17th century Gothic fell into
tire disuse. Toward the close of
18th century a reaction began, and
movement has gone on gather
strength ever since.

Also the language of the Goths.
belongs to the Low German group
the Teutonic dialects, to which bel
English, Frisian, Dutch, Flemish,
Old Saxon. It is the oldest and m
primitive of the Teutonic dialects
which any remains are known.

Gottenburg, or **Gothenburg,**
seaport town in Sweden, the second
importance, capital of the lan of
same name; 255 miles W. S. W.
Stockholm. It is one of the best bu
towns in Sweden, and the seat of
bishopric. It has extensive manuf
tures. The harbor is excellent, it
a good depth of water, is defended
forts, and there is a dry dock cut
the solid rock. Among social refor
ers the town is noted for its mana
ments of the liquor question. P
(1900) 130,619.

Gottfried von Strasburg,
famous mediæval German poet;
flourished about the close of the 1
and the beginning of the 13th centu

Gottingen, a town in the forn
kingdom of Hanover; 538 feet ab
sea-level on the Leine. The celebra
university (Georgia Augusta)
founded in 1734-1737. Connec
with it are the library of 500,000
umes and 5,000 MSS., the art museu
the splendid botanic garden (laid

y Haller), the observatory, the labratory, the lying-in hospital, etc. ongfellow, Motley, Ticknor, Bancroft, nd several other illustrious Amerians studied at Gottingen, whose nave alumni include many of Gerany's most famous sons.

Gottschalk, Louis Moreau, an merican pianist and composer; born n New Orleans, La., May 8, 1829. e appeared in the United States and n Mexico and South America. He ied near Rio de Janeiro, Brazil, Dec. 8, 1869.

Gottschall, Rudolf von, a Geran critic; born in Breslau, Sept. 30, 823. Besides his critical studies he roduced brilliant plays, stories, etc.

Gottsched, Johann Christoph, German critic and author; an imortant figure in the history of Geran literature; born in Judithenkirch, ear Konigsberg, Prussia, Feb. 2, 1700. etween 1729 and 1740 Gottsched ercised a sort of Johnsonian dictarship in the world of polite literature Germany. His chief endeavors were rected to the reformation of the Geran drama.

Gough, Hugh Gough, Viscount, English military officer; born in oodstown, Limerick, Ireland, Nov. 3, 779. In 1837 he went to India as ajor-General, and in the following ear was made commander-in-chief of e forces sent against China. After orming Canton and forcing the pasge of the Yang-tsze-Kiang, he comlled the Chinese to sign the treaty of anking (1842). On the outbreak of e Sikh war in 1845 he worsted the emy in the brilliant battles of Mud-, Firozshah, and Sobraon, for which e was given a peerage. In 1848 the khs renewed the war, but were again feated by Gough at Ramnagar, Chilnwalla, and Gujerat, victories which sulted in the annexation of the Punb to British India. Gough was in 49 created a viscount, and about e same time returned to England. He as made field-marshal in 1862, and ed near Dublin, March 2, 1869.

Gough, John Bartholomew, an merican temperance lecturer; born Sandgate, Kent, England, Aug. 22, 17 His father was a pensioner of e Peninsular war, his mother a vilge schoolmistress. At the age of 12 he was sent to America, and worked on a farm in Oneida co., New York. In 1831 he went to New York city, where he found employment in the binding department of the Methodist book establishment; but habits of dissipation lost him this employment, and reduced him to that of giving recitations and singing comic songs at low grog shops. He was married in 1839; but his drunken habits reduced him to poverty and delirium tremens, and probably caused the death of his wife and child. In 1842 a benevolent Quaker induced him to attend a temperance meeting and take the pledge; and soon afterward, resolving to devote the remainder of his life to the cause of temperance, Gough attended temperance meetings and related his experience with such effect as to influence many others. A few months later he had a short relapse into drunkenness; but an eloquent confession restored him to favor, and he lectured with great pathos, humor, and earnestness in various parts of America. In 1853 he was engaged by the London Temperance League, and lectured for two years in the United Kingdom, where he attracted large crowds to his meetings. He was again in England in 1857-1860 and 1878. In some of his later addresses he took up literary and social topics, and acquired a moderate fortune by his lectures. He died in Frankford, Pa., Feb. 18, 1886.

Goujon, Jean, a French sculptor and architect; born in Paris in 1515. He was the author of what is considered the masterpiece of French sculpture, the "Huntress Diana," now in the Louvre collection.

Gould, Augustus Addison, an American naturalist; born in New Ipswich, N. H., April 23, 1805, was graduated at Harvard College, 1825, and its medical department 1830; spent some time as scientific instructor there; began practising in Boston, and was appointed visiting physician to the Massachusetts General Hospital in 1856. His scientific studies led him to the special fields of botany, zoölogy, and conchology; in the latter he became one of the most eminent authorities in the world. He aided Sir Charles Lyell in his geological investigations in the United States. He died in Boston, Mass., Sept. 15, 1866.

Gould, Benjamin Apthorp, an American astronomer; born in Boston, Mass., 1824. He was graduated at Harvard in 1844 and pursued his scientific studies abroad. In 1849 he received an appointment to the United States Coast Survey, and devised methods for determining the longitudes telegraphically. From 1870 to 1885 he was director of the national observatory at Cordova, Argentine Republic, where he completed three extensive catalogues of stars, and conducted meteorological and climatological investigations. He died in Cambridge, Mass., Nov. 26, 1896.

Gould, Francis Carruthers, a noted cartoonist; born in Barnstaple, England, in 1845. His "Cartoons for the Crisis," published during the general election of 1895, gave him a wide reputation as a political caricaturist.

Gould, Hannah Flagg, an American poet; born in Vermont in 1789; died in 1865.

Gould, Helen Miller, an American philanthropist; born in New York city, June 20, 1868; daughter of the late Jay Gould. She became widely known through her various gifts for charitable and educational purposes. When the war with Spain broke out she gave $100,000 to the United States government and became an active worker in the Woman's National War Relief Association, contributing freely to its work. When the sick and convalescent soldiers were taken to Camp Wikoff, L. I., she gave $25,000 to purchase needed supplies and in person cared for many of the sick. Her other gifts include $380,000 to the University of New York, etc., in 1898; $50,000 to the Naval Branch of the Young Men's Christian Association of Brooklyn; and $100,000 to the University of New York for a Hall of Fame for Great Americans, in 1900.

Gould, Jay, an American financier; born in Roxbury, N. Y., May 27, 1836; was brought up on his father's farm; attended Hobart College a short time, acquired a taste for mathematics and surveying; made surveys of Ulster, Albany, and Delaware counties, and began his railroad career directly after the panic of 1857; invested in bonds of the Rutland and Washington railroad, and became president, treasurer, and superintendent of the road. S afterward he effected a consolidat of his road with the Rensselaer Saratoga road, withdrew his capi removed to New York, opened broker's office, and began dealing Erie stocks and bonds. In associat with James Fisk, Jr., he entered directory of the company, and elected president, with Fisk as v president and treasurer. On the organization of the company, 1872, lost official connection with it. then invested heavily in the vari Pacific railroads, secured control o number of important lines, b branches, and effected combinati which resulted in the establishment what is known as the "Gould syste He died in New York city, Dec. 1892, leaving property valued at $ 000,000.

Gould, John, an English o thologist; born in Lyme-Regis, Dor England, Sept. 14, 1804. In 1827 was appointed curator to the Zoöl ical Society's Museum, and in 1 proceeded to study the Australian bi in Tasmania, South Australia, a New South Wales. The results of researches are embodied in his gr work on the "Birds of Australia." died in London, Feb, 3, 1881.

Goulding, Francis Robert, American story-writer; born in Ge gia in 1810. He was a Presbyter clergyman. He died in 1881.

Gounod, Charles Francois, French composer; born in Pa France, June 17, 1818. In 1859 produced "Faust," his chief wo which at once attained European po larity, and raised its composer to foremost rank of contemporary mu cians. He also published much chu music, including several mass hymns, and motets or anthems, a was extensively popular as a so writer. From 1870 to 1875 he resi in England. He was a member of Institute (1866), and a commander the Legion of Honor (1877). He d in St. Cloud, France, Oct. 18, 1893

Gourd, a hispid plant, with t drils, large yellow flowers, and obl or ovate fruit; a native of Astrakh but cultivated in many countries. has run into many varieties. T pumpkin and squash are familiar ty of the gourd.

Gout, a disease produced by the
cess of uric acid in the blood in the
rm of urate of soda. It is usually
ereditary, is rare before the age of 30,
d generally arises from excessive in-
lgence in wines or malt liquors, the
st giving rise to "poor man's gout."
is rarely produced by the use of
irits. The great toe is the part most
equently affected, pain and irritabil-
y are leading symptoms; it may be-
me chronic, and is very intractable
treatment.

**Government of the United
tates.** The executive power is vest-
in the President, who holds office
r four years and receives annually
0,000. The Vice-President, as presi-
nt of the Senate, discharges the
ities of that office, except in case of
e removal or death of the President,
which event he assumes the execu-
ve powers. He is elected for the
me term of office as the President,
d receives $8,000 annually. The
esident and Vice-President are elect-
by electors chosen by the people.
he number of electors from each
ate is equal to the whole number of
nators and Representatives to which
e State may be entitled. The electors
te by ballot. These votes are sent
aled to the president of the Senate,
ho opens them in the presence of
ongress. If there are two parties who
ve received an equal number of
tes, the House of Representatives
ooses by ballot one of them for
esident, provided a possible third
ndidate has not received a majority
the votes, in which case he is en-
led to the office. The various cabinet
icers are appointed by the President.
ey are eight in number, and receive
,000 each annually. The cabinet is
ranged in the following order of suc-
ssion named in the Presidential Suc-
ssion Act of Jan. 19, 1886, which
ovides for a successor for the Presi-
nt and Vice-President should they
th die during their term of office:

1. Secretary of State.
2. Secretary of the Treasury.
3. Secretary of War.
4. Attorney-General.
5. Postmaster-General.
6. Secretary of the Navy.
7. Secretary of the Interior.
8. Secretary of Agriculture.

The legislative power is vested in Congress, of which there are two branches; the Senate, which is composed of two members from each State, who hold office for six years, at an annual salary of $5,000; and the House of Representatives, who are elected by a majority of votes cast in the various congressional districts of each State, to hold office two years, and receive $5,000 annually. The President of the United States is commander-in-chief of the army and navy; but the direct supervision of them belongs to the Secretaries of War and of the Navy.

The judiciary of the United States consists of a Supreme Court, which sits at Washington, and which is composed of a Chief-Justice, who receives $10,500 annually, and eight Associate Justices, who receive $10,000 annually. They are appointed by the President, and hold office during good behavior. The United States is divided into nine judicial circuits, each of which has two or three circuit judges (according to the size of the circuit), who are paid $6,000 a year. There are also 76 district courts, from which an appeal lies to the Circuit Court.

Each State and Territory has its own local government, not unlike the general government in its essential features. The executive authority is vested in the governor, whose term of office and salary vary in different States. The revenue of the national government is chiefly derived from customs duties, proceeds of sales of public lands, and internal revenue taxes upon distilled spirits, fermented liquors, tobacco, etc. In conformity with several acts of Congress, the surplus revenue is devoted to the gradual redemption of the public debt.

Governor's Island, a small island at the main entrance of Boston Harbor; Fort Winthrop is built on it. Also an island in New York harbor; Fort Columbus, the headquarters of the Military Department of the East, U. S. A., is built on it.

Gower, John, an early English poet, a contemporary and friend of Chaucer; born about 1320. He was liberally educated, and was a member of the society of the Inner Temple. He died about 1408.

Gown. The academic gown is a survival of the tabardus, a garment with many folds, which came in when the doctors began to wear long priestly robes as a distinctive mark of their standing as clerics. In the United States it is becoming more generally the custom for gowns to be worn at colleges for either sex. Gowns are also worn by judges of the Supreme Court of the United States, while in session, and by judges of some of the higher courts in New York and other States.

Gozo, an island in the Mediterranean, 4 miles N. W. of Malta and belonging to Great Britain; with the adjacent smaller island of Comino, area, 20 square miles; pop. 16,500. The surface is hilly, but the soil fertile. Chief town Babato, near the center of the island.

Graaf, Regnier de, a Dutch physician and anatomist; born in Schoonhoven, Netherlands, July 30, 1641. In the course of his investigations in abdominal anatomy he discovered in 1672, the graafian vesicles, or follicles of the female ovum. He wrote several dissertations on the organs of generation in both sexes. He died in Delft, Netherlands, Aug. 17, 1673.

Gracchus, Tiberius Sempronius, a Roman politician, son of Tiberius Sempronius Gracchus and Cornelia, daughter of Scipio Africanus Major; born about 168 B. C. The hopeless poverty in which thousands of the Roman citizens were sunk now began to weigh on the mind of Gracchus, and caused him to plunge into an agitation for reform. Elected tribune of the people in 133, he endeavored to reimpose the agrarian law of Licinius Stolo, and after violent opposition on the part of the aristocratic party, he succeeded in passing a bill to that effect. Tiberius Gracchus, his brother Caius, and his father-in-law Appius Claudius were appointed triumvirs to enforce its provisions. Meantime Attalus, King of Pergamus, died, and bequeathed all his wealth to the Roman people. Gracchus proposed that this should be divided among the poor, to enable them to procure agricultural implements and to stock their newly-acquired farms. But fortune turned against the good tribune. He was accused of having violated the sacred character of the tribuneship by the deposition of Cæcina, and thousands
of the fickle mob deserted their cha
pion and benefactor. In the midst
the next election for the tribuneshi
in 133 B. C., Tiberius Gracchus, wi
some hundreds of his friends, wa
murdered.

Grace, in ordinary language,
short prayer before or after meat;
blessing asked or thanks returned.
Greek mythology, one of three sist
goddesses, called Aglaia, Thalia, an
Euphrosyne, daughters of Jupiter an
the ocean nymph Eurynome. In the
gift were grace, loveliness and favo
By the Greeks they were known
Charities, and by the Romans
Gratiæ.

Grace, Days of, in commerce,
certain number of days immediate
following the day, specified on the fac
of a bill or note, on which it becom
due. Till the expiry of these days pa
ment is not necessary. In the Unite
States the days of grace have bee
abolished generally in National ban
operations.

Grace, William Gilbert, an En
glish cricketer; born in Downen
near Bristol, England, July 18, 184
He was fourth son of the village do
tor; was a very distinguished cricket
by 1864; and soon was by far th
foremost of cricketers, not merely pla
ing in the great matches at home bu
making cricketing tours in Canad
and the United States (1871), an
Australia (1873).

Grace, William Russell, som
times called "King of Peru," on a
count of his large interests in tha
republic; born Queenstown, Irelan
May 10, 1832, son of James and Elle
Mary (Russell) Grace; ran away a
14 and worked his way to New York
afterward went to Peru, and rose fro
clerk to large wealth; settled in Ne
York and was mayor in 1881–2 an
1885–6; head of W. R. Grace & Co
leading firm in South and Centr
American trade.

Grady, Henry Woodfen, a
American journalist; born in Athen
Ga., in 1851; was educated at th
University of Georgia; served in th
Confederate army during the latte
part of the Civil War; became on
of the staff of the Atlanta "Herald
and correspondent of the New Yor
"Herald" in Georgia. His writing

ntributed much to the growth and osperity of the "New South," he as also one of the editors of the At- nta "Constitution." Among South- n editors he was perhaps more wide- known than any other. He died in lanta, Ga., Dec. 23, 1889.

Græfe, Karl Ferdinand von, a erman surgeon; born in Warsaw, ussian Poland, in 1787. To him the ence is indebted for the introduction many new instruments and methods operating. He died in 1840. His n, Albrecht von Græfe (1828–1870), eminent oculist, devoted himself ore particularly to ophthalmology, d established in Berlin a private nic and hospital for eye diseases, ich became so well known as to be quented by patients and students m all parts of the world. He was ofessor of Ophthalmology from 1867.

Graf, a title of nobility which in rmany corresponds to the title nt. The first mention of this par- ular grade of nobility occurs in the century. There are two classes of fs in Germany at the present time, first forming a section of the high- and oldest nobility, and the second presenting the higher order of the ver nobles.

Grafting, in carpentry, a scarfing endwise attachment of one timber another, as in attaching an extra gth or false pile to one already ven. In nautical language, the ering of the end of a rope, usually ered by weaving yarns around it. surgery, the transplanting of a por- n of skin to a denuded surface.

n husbandry, the act or process of erting a shoot or scion taken from tree or shrub in a vigorous stock its own or a closely allied species, as to cause them to unite and ble the graft to derive a larger ply of nutritive power than it ld otherwise obtain. There are nerous methods of grafting. One rafting by approach, or inarching, en two growing plants are united ether, and after adhesion one is ered from its own stock and left to w on the other. This kind of ad- ion sometimes takes place naturally trees growing close together. The al method of grafting is by scions slips, which are applied to the stock a sloping surface, or are inserted into slits in it by cleft-grafting, or into perforations by wimble or peg-grafting. Sometimes several slips are placed in a circular manner around the inside of the bark of the stock, by crown grafting; or the bark of a portion of the stock is removed, and that of the scion is hollowed out, so as to be applied over it like the parts of a flute, hence called flute-grafting. Budding is practised by the removal of a bud from one plant, along with a portion of the bark and new wood, and applying it to another plant, in which a similar wound has been made. In whip grafting, or tongue grafting, the stock is cut obliquely across, and a slit or very narrow angular incision is made in its center downward across the cut surface, a similar deep incision being made in the scion upward at a corresponding angle, and a projecting tongue left, which, being inserted in the incision in the stock, they are fastened closely together. Splice grafting is performed by cutting the ends of both the stock and the scion across at such an angle that the oblique surfaces exactly fit each other and are fastened together. In saddle grafting the end of the stock is cut into the form of a wedge, and the middle of the scion cut away so as to rest exactly upon the stock. Grafting is usually performed between the woody parts of the plants, but herbaceous parts may also be united in this way. It is requisite that the growing parts be brought into apposition — the two albumens and the two libers. Union will only take place where the active processes of life are freely exercised. The graft and stock are secured together by means of clay, or a mixture of bees'-wax and tallow, or by bits of india-rubber.

The term "grafting" is also applied in common talk, and especially in political recrimination to the obtaining of money by methods which, while possibly within the law, are at least dishonorable, and particularly to the use of public office for personal gain in a manner that is morally dishonest. It is sometimes also applied in cases that are clearly criminal.

Grafton, Augustus Henry Fitzroy, Duke of, an English statesman, a descendant of Charles II.; born Oct. 1, 1735. In 1757 he succeeded his grandfather, the second duke. In 1766 Pitt became premier and Earl of Chatham, making Grafton First Lord of the Treasury; but in consequence of Chatham's continued illness Grafton was compelled to take on his own shoulders the responsible duties of head of the government from September, 1767. He resigned in 1770, accepted the office of Lord Privy Seal under Lord North in 1771, and filled it till November, 1775. When the new Rockingham ministry was formed in March, 1782, Grafton took his old post as Lord Privy Seal, but resigned office 13 months later. He died in Euston Hall, Suffolk, England, March 14, 1811.

Graham, the name of an illustrious Scottish family of Anglo-Norman origin, who settled in Scotland during the 12th century.

Graham, James, a Scottish military officer; born in 1612; fifth Earl and first Marquis of Montrose. When the Civil War began he took up arms with the Presbyterians, but later joined the king, who appointed him lieutenant-general in Scotland in 1644. He was victorious over the Covenanters in numerous engagements, but was finally overcome by David Leslie at Philiphough, Sept. 13, 1645, and was exiled from Scotland. Later he became a field-marshal in the army of Emperor Ferdinand III. In 1650 while endeavoring to lead a Royalist force into Scotland he was captured and executed.

Graham, John, Viscount Dundee, commonly known as Claverhouse, a Scottish soldier, eldest son of Sir William Graham, of Claverhouse; born, about 1650. In 1677 he was appointed captain of a troop of horse raised to enforce compliance with the establishment of Episcopacy. He distinguished himself by an unscrupulous zeal in this service. He was made a privy-councillor, and received the estate of Dudhope, with other honors from the king, and though on the accession of James his name was withdrawn from the privy-council it was soon restored. In 1686 he was made Brigadier-General, and afterward Major-General; and in 1688, after William had landed, he received from James in London the titles of Lord Graham of Claverhouse and Viscount Dundee. When the king fled he returned to Edinburgh, but finding Covenanters in possession he reti to the N., followed by General Mack After making an attempt on Dund Claverhouse finally encountered a defeated Mackay in the Pass of Kil crankie, July 17, 1689, but was kil in the battle.

Grail, a term properly applied the legendary dish used at the L Supper. According to one legend, Holy Grail was brought by Joseph Arimathea to England, where he s tled at Glastonbury about A. D. Finally it was transported to Ind where it still remains. In A. D. 1 the Crusaders, at the capture Cæsarea, found what they believed be the veritable Holy Grail, a d made of a single large emerald. It now preserved in the Cathedral San Lorenzo, in Genoa. Another lege says that the holy vessel was brou from heaven by angels, and intrus to the care of a body of knights, v guarded and watched it on the top a high mountain. It was invisible any one not perfectly pure. The sear or quest, for the Holy Grail after loss or disappearance, formed the s ject of numerous romances or poe such as those of Arthur and Knights of the Round Table.

Grain Elevator, a building signed for the reception, storage a transshipment of wheat, corn a other cereals. It is a tall struct situated near wharf and railway fa ities. There are elevators capable storing 1,000,000 to 1,500,000 bush of corn. The largest are erected Chicago, Buffalo, Minneapolis, Dul and Superior; at these two last poi combined there is a total elevator pacity of about 50,000,000 bushels. New York, floating elevators are quently employed to transfer the gr from barges to sea-going vessels dir

Grakle, the common name of ma birds of the starling family, all tr ical or subtropical. In the Uni States the name grakle or grackle applied to several species of the c nivorous birds, also called "bla birds" and "boat-tails."

Grammar, the science which tre of the words of which language is co posed, and of the laws by which it governed. It is of two kinds, desc

ve and comparative. Descriptive
ammar classifies, arranges, and de-
ribes words as separate parts of
eech, and notes the changes they
ndergo under certain conditions.
omparative grammar, which is based
the study of words, goes further; it
alyzes and accounts for the changes
ey have undergone, and endeavors to
ace them back to their origin; it
us deals with the growth of lan-
iage.

Grammont, the name of an illus-
ious French family. Philibert, Count
Grammont, known by his memoirs,
ritten by his brother-in-law An-
ony, Count Hamilton, died in 1720;
ouis, Duke de Grammont, lost the
ttle of Dettingen, and was killed at
ontenoy, 1745. The last Duke of
rammont, father of the Duke of
uiche, and the countesses of Tanker-
lle and Sebastiani. He died in 1836.

**Grammontians, Grandmon-
nes,** or **Grandimontains,** a mo-
stic order founded in A. D. 1073, with
ie sanction of Pope Gregory VII., by
tephen of Thiers, a nobleman of
uvergne. The order became extinct
the Revolution.

Grampians, a mountain range in
cotland which sends up several lofty
eaks that form the highest eminences
Scotland. Of these the most im-
ortant are Ben Lomond, Ben Ledi,
en More, Ben Lawer, and Ben Vor-
ch. Also, the name of a mountain
ain in the colony of Victoria, South
ustralia, whose highest point is
Iount William, which is 4,500 feet
bove the level of the sea.

Grampus, an animal of the ceta-
ean order, closely allied to the por-
oise, to which genus it is often re-
erred. It is one of the largest of the
olphin family, attaining 20 to 25 feet
length and 4 feet in diameter at
s greatest thickness. It tapers both
the head and tail, being much more
ongated toward the latter. The head
round, the muzzle truncated, the
pper jaw projecting slightly over
ie lower. The body is of a brilliant
lack color above and pure white
elow. It is very voracious, prey-
ig on small cetaceans, etc., and it
ven attacks whales in troops. It also
reys on salmon and pursues them up
ie mouths of rivers.

Granada, an ancient kingdom, and one of the old provinces in Southern Spain. The surface of Granada is mountainous and picturesque in a high degree. Granada was part of the Roman province of Boetica; but after the Arab invasion it formed an independent Moorish kingdom. It was the last possession of the Moors in Spain, and was conquered by Ferdinand and Isabella in 1492.

Granada, city and capital of the above province, was the ancient metropolis of the Moors in Spain, and stands on the Genil, 120 miles from Seville. The town exhibits the form of a half-moon, its streets rising above each other, with a number of turrets and gilded cupolas, the whole crowned by the Alhambra, or palace of the ancient Moorish kings, and in the background the Sierra de Nevada, covered with perpetual snow. The grand ornament of Granada is the Alhambra, the wonder of Arabian architecture. Though now, like the town, in a state of decay, its remains sufficiently evince its original splendor. It commands a beautiful prospect; but a still finer is afforded by another Moorish palace, called the "Generaliffe," built on the opposite hill, and the retreat of the court during the heats of summer.

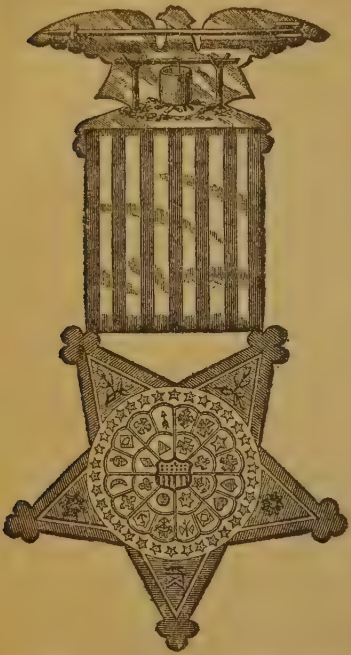
Granada, a department and city of Nicaragua on the N. W. side of Lake Nicaragua. Founded in 1522, it was formerly the chief town of the republic, but has suffered greatly from civil wars; it is still, however, of importance as a trading center.

Granadilla, the West Indian name for the fruits of various species of the passion-flower family.

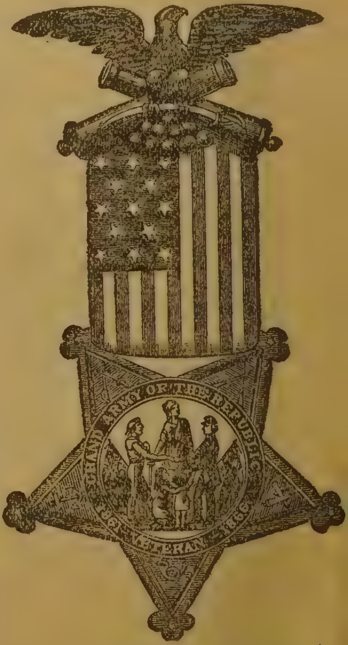
Gran Chaco, an extensive central tract of South America, bounded on the E. by the Paraguay and Parana, and on the W. by the Argentine provinces of Santiago del Estero and Salta; area, about 180,000 square miles. Contains many wild, and some dangerous Indians.

Grand Army of the Republic, a patriotic organization in the United State composed of the National veterans of the Civil War. It was organized in Decatur, Ill., April 6, 1866, by Dr. B. F. Stephenson, of Springfield, formerly surgeon of the 14th Illinois Infantry. The establishment of Post 1

in Decatur was soon followed by Post 2 in Springfield, and in a few months other posts sprang up in Illinois, Indiana, Wisconsin, Iowa, Missouri, and other States. The first National Convention was held in Indianapolis, Ind., Nov. 20, 1866, with delegates from 10 States and the District of Columbia. Gen. Stephen A. Hurlbut, of Illinois, was chosen commander-in-chief and Dr. B. F. Stephenson, adjutant-general. The next National Convention was held in Philadelphia, Pa., Jan. 15, 1868, when it was enacted that annual sessions should be held. The main purpose of the Grand Army of the Republic and the qualifications of its members are given in the sixth rule of the organization, which is as follows: "To maintain true allegiance to the United States of America, based on a paramount respect for, and fidelity to,
its Constitution and laws, to discour
tenance whatever tends to weaken loy
alty, incites to insurrection, treaso
or rebellion, or in any manner impai
the efficiency and permanency of ou
free institutions; and to encourage th
spread of universal liberty, equa
rights, and justice to all men. Soldie
and sailors of the United States arm
navy, or marine corps, who served be
tween April 12, 1861, and April
1865, in the war for the suppressio
of the rebellion, and those having bee
honorably discharged therefrom afte
such service, and of such State reg
ments as were called into active se
vice and subject to the orders of th
United States general officers betwee
the dates mentioned, shall be eligible t
membership in the Grand Army of th
Republic. No person shall be eligib
to membership who has at any tim



BADGE OF THE G. A. R.—REVERSE.


GRAND ARMY OF THE REPUBLIC
VETERAN 1866

BADGE OF THE G. A. R.—OBVERSE.

orne arms against the United States." n June 30, 1900, there were 6,045 rand Army posts; 45 departments; nd 276,662 members.

Grand Canyon, a gorge through hich the Colorado river flows in Ari- ona; 65 miles from Flagstaff. It is ne of the natural wonders with which hat country abounds. The canyon is a orge 217 miles long, or with the addi- ion of Marble Canyon, connected with t, 286 miles. It is from 9 to 13 miles ide and 6,300 feet below the level of he plateau. This depth is maintained or about 50 miles and surpasses that f any other canyon in the world.

Grand-Carteret, John, a French ournalist; born in Paris, about 1850. f late years he has made important tudies of life and manners of modern urope.

Grand Coutumier of Norman- y, a collection of ancient laws or ustoms of the Duchy of Normandy, n use in England during the reigns of he early Norman sovereigns, and hich still form the basis of the laws f the Channel Isles, which formerly elonged to that duchy. It is supposed o have been compiled subsequently to he reign of Richard I.

Grandees, a class of nobility in he kingdom of Castile, in which the nembers of the royal family were in- luded. Their honors were hereditary; hey held lands from the crown on the enure of military service, were ex- empted from taxation, and could leave he kingdom, and even enter the ser- ice of a foreign prince at war with astile, without incurring the pen- alties of treason. Under Ferdinand and Isabella they were deprived of most of their peculiar privileges; and Charles V. converted them from an independent feudal nobility into a de- pendent court nobility. Under Joseph Bonaparte their dignities and privileges were entirely abolished; but they were partially regranted at the subsequent restoration. Grandees are still members of the Spanish senate in their own right.

Grand Duke, a title applied to members of the imperial family of Russia, and also to the sovereigns of certain German states, who are considered as holding a position between duke and king.

Grand Jury, a body of men selected according to the different laws of the several States, usually numbering 24, and whose duty it is to receive secretly the evidence presented regarding alleged crimes, and if satisfied that a crime has probably been committed, then to present an indictment against the accused to the proper court. As a rule the Grand Jury is approachable only through the prosecuting officer of the district, but they have a right to take up any inquiry independently of such officer, and it is also within their power, if not their duty, to investigate in a general way the conditions of public institutions, and make presentments regarding the same.

Grand Larceny, the stealing of goods exceeding a certain value, varying in various States.

Grand Lodge, the State lodge of Freemasons, Odd Fellows, and other fraternal organizations. It is presided over by the grandmaster, and grants charters, dispensations, etc., and acts generally as the governing body of the order in the State. The officers of grand lodges are delegates from the various subordinate or local lodges.

Grand Prix de Rome, a prize given annually by the Academy of Fine Arts in Paris to the most successful competitor in painting, music, sculpture, etc. The winners of the prize become the charge of the government for four years and are sent to Rome to reside.

Grand, Mme. Sarah, an English novelist; born (Frances Elizabeth Clarke) in Ireland. She married a British naval officer almost immediately on leaving school, and traveled widely. She lectured in the United States in 1901.

Granicus, a river of Bithynia, famous for a battle fought on its banks between the troops of Alexander the Great and those of Darius, 334 B. C., when 600,000 Persians were defeated by 30,000 Macedonians.

Granite, an unstratified rock, normally consisting of three simple minerals, felspar, quartz, and mica, or, in Dana's nomenclature, of orthoclase, quartz, and mica. Granite is of much economic value as a building stone. The production of granite in the United States in 1900 was valued at $12,-

675,617. The leading States in its production were Maine, Massachusetts, Vermont, and Delaware.

Granite State, the popular name of New Hampshire. Fine building granite is quarried at many points, notably at Plymouth, Concord, Milford, Pelham, etc.

Grant, the conveyance in writing of such things as cannot be passed or conveyed by word only, as lands, reversions, rents, etc., or made by such persons as cannot give but by deed.

Grant, George Monroe, a Canadian author; born in Stellarton, Pictou co., Nova Scotia, Dec. 22, 1835. In 1877 he was elected to the principalship of Queen's University.

Grant, Sir Francis, a Scotch artist; born in Edinburgh, Jan. 18, 1803; educated at Harrow and the University of Edinburgh for the Scottish bar, but abandoned that profession to follow his natural genius for painting. His most famous works are those in which he has combined the likenesses of distinguished characters with scenes of English sport. In 1866 he became president of the Royal Academy and was knighted. He died in Melton Mowbray, Oct. 5, 1878.

Grant, James, a Scotch novelist; born in Edinburgh, Aug. 1, 1822. In 1839 he was gazetted to an ensigncy in the 62d Foot, but within a few years resigned his commission and turned to literature. Most of his works have reappeared in foreign translations. He died in London, May 5, 1887.

Grant, Sir James Hope, a British military officer; born in Kilgraston, Perthshire, Scotland, July 22, 1808. In 1859 he conducted the war against China, defeating the enemy three times under the walls of Peking, assaulting the Taku forts, and finally capturing the capital of the empire, for which work he was created G. C. B. He returned to England, and was made general in 1872. He died in London, March 7, 1875.

Grant, Robert, an American author; born in Boston, Mass., Jan. 24, 1852; was graduated from Harvard in 1873 and the Harvard Law School in 1879. Since 1893 he has been a judge of probate and insolvency for Suffolk co., Mass.

Grant, Ulysses Simpson,
American statesman and one of Ame
ica's greatest generals; 18th Preside
of the United States; born in Poi
Pleasant, O., April 27, 1822, enter
West Point Academy in 1839, gradua
ed in 1843, received a commission
the United States Army in 1845, ar
served under Generals Taylor ar
Scott in Mexico. In 1852 he was o
dered to Oregon, and in August, 185
became full captain. He resigned h
commission in July, 1854, and so
after settled in business at Galen
Ill. From this privacy he was draw
out by the Civil War, and having ac
ed first as aide-de-camp to the go
ernor of his State in 1861, and afte
ward as colonel of the 21st Illino
Volunteers, was appointed a Brig
dier-General in July of the same yea
While in command at Cairo, he s
cured Paducah, and with it the Sta
of Kentucky. In November, 1861,
fought and gained the battle of Be
mont, and in January of the follow
ing year conducted a reconnoissan
to the rear of Columbus. After ca
turing Fort Henry, on the Tennesse
General Grant pursued the Confede
ates to Fort Donelson. There a s
vere battle raged almost without i
terruption for three days and thr
nights, when, Feb. 15, the fort w
surrendered unconditionally. This bri
iant feat elevated General Grant
the rank of Major-General. Havi
been appointed to the command of t
district of Western Tennessee, Gra
advanced up that river to Pittsbu
Landing, where he had to conte
against a force of nearly 7,000 me
The National lines were overwhelme
crushed, dispersed; but General Gra
undismayed, formed new lines, plante
new batteries, and thus held the Co
federates in check till dark, when th
long expected arrival of his rear-gua
of 35,000 men under General Buel
enabled him to fight, April 6 and
the glorious battle of Shiloh, whenc
the Confederates, abandoning the fiel
retreated to Corinth. General Gra
was second in command to Genera
Halleck at the siege of Corinth, an
when the latter was ordered to Was
ington, he was appointed to take co
mand of the Department of Tennesse
in which capacity he marched again
Vicksburg, the so-called "Gibralta
of the Confederates on the Mississi

i. After a long and memorable siege his important place was surrendered nconditionally, and 37,000 prisoners, 50 cannons, with an immense amount f military stores, fell into the hands f the victors.

Upon the defeat of General Roserans at Chickamauga, Grant was ent to repair the disaster, and, on ov. 25, he defeated General Bragg t Lookout Mountain. This great ictory, by which Eastern Tennessee vas reduced and Kentucky saved, was erhaps the most brilliant strategic nd tactical movement of the war; it laced General Grant on a footing vith the ablest generals of any country or of any age. A few months aftr, March 1, 1864, Grant was raised o the highest military position in the and — under the title of Lieutenant-eneral he was constituted commandr-in-chief of all the armies of the nited States. Invested with this auhority, the plan of General Grant vas to destroy Lee's army. Washngton was to be covered from raid, hrough the Shenandoah, by General igel. General Butler was to mence Richmond from the S. Sherman n Georgia was to press his campaign n that department with all vigor, that o reinforcements might be sent to he aid of Lee. General Grant with eade's army of 150,000 N. of the apidan, was to draw Lee's army out f their intrenchments, and either detroy them, or compel them to rush rom the menacing of Washington to he protection of their own capital. n the night of Tuesday, May 3, Genral Grant crossed the Rapidan and ntered what is called The Wilderess. By a flank movement Grant was etting into the rear of his foe. Lee ushed from his intrenchments, and ndeavored to overwhelm Grant. Then egan the most gigantic and terrific ampaign recorded in history.

After 11 days of bloody and almost ninterrupted battles, the two armies, n the 12th day of this unparalleled truggle, were still confronting each ther, both on the defensive, sternly ooking face to face, both prepared for nother round. With the first dawn he battle was renewed by a tremenous but vain assault upon the Conederate lines. General Lee, neverheless, fearing Grant might get beween him and Richmond, cutting off his supplies, decided to retire, and Grant succeeded in crossing the North Anna and reached the famous banks of the Chickahominy. Finding the intrenchments of the enemy in his front too formidable to be carried by direct assault, Grant moved his troops to join General Butler at Bermuda Hundred. The performance of this movement in the presence of Lee's army, who at many points were but a few rods from him, is perhaps one of the most brilliant pages of General Grant's military career. Slowly wore away long months of expectation on the part of an impatient people.

Impenetrable to jealousy, he had but one aim, one thought — the grasping of Richmond; but the time was not yet come. With the coming of the spring of 1865, Lee, whose position and resources were quite exhausted by the self-possession and strategy of the Union commander-in-chief, now determined to assume the offensive, and on the night of March 27, 1865, he massed three divisions of his troops in front of Fort Steadman and on Grant's right, and by a sudden rush at daybreak on the following morning succeeded in surprising and capturing that important position. It is claimed by Union soldiers on the ground that they were surprised because, knowing the hopeless condition of the Confederates, they thought the latter were coming to surrender. Before noon of the same day, however, the fort was retaken by the Union troops, with all its guns and 1,800 Confederate prisoners. At this time a battle, which continued until evening, was raging at Hatcher's Run. Three corps were massed under General Sheridan below Petersburg, and on Sunday morning, April 2, flanked the Confederates at Big Five Forks, capturing their intrenchments with 6,000 men. The attack, under General Grant's direction, then commenced along the whole line, and the assault was so successful that on the same night his forces held the Confederate intrenchments from the Appomattox, above Petersburg, to the river below. At 3 o'clock that afternoon General Lee telegraphed to Jefferson Davis that he had been driven from his intrenchments, and that Petersburg and Richmond must be abandoned, which operation was performed that night; and on the next day, April 3, 1865, the National army entered Petersburg, and General Wietzel occupied Richmond. By rapid movements, General Grant cutting off Lee's retreat to Lynchburg and Danville, came up with him at Appomattox Courthouse, and demanded his immediate surrender. The two chiefs met and arranged the details, and on Sunday, April 9, the Army of Northern Virginia capitulated. The whole of General Lee's army was paroled, with permission at once to return home. The officers were granted the privilege of retaining their side-arms, horses and baggage, and each private claiming a horse was permitted to keep it. All other property belonging to the Confederate government in the department was surrendered to the United States.

In 1866 General Grant was promoted to the rank of General, that honor being created especially for him. In August, 1867, on the suspension of Mr. Stanton by President Johnson, General Grant consented to fill the office of Secretary of War ad interim, but the Senate having refused to approve the suspension, General Grant, Jan. 13, 1868, surrendered the office to Mr. Stanton. On June 20, 1868, General Grant was unanimously nominated by the Republicans as a candidate and elected the following November President of the United States, in which capacity he served till 1877, being reëlected at the end of his first term.

On May 17, 1877, accompanied by his wife and one son he sailed from Philadelphia, Pa., for a tour around the world. Not only did he receive a grand farewell from his own countrymen, but when he arrived in the Mersey River, England, the ships of all nations gathered there displayed their flags to greet him. In England a grand reception was accorded him in every city he visited. He was received by Queen Victoria and the Prince of Wales in London, and later visited the Queen at Windsor Castle. After visiting the other countries of Europe and being entertained by all the crowned heads, the United States man-of-war "Vandalia" was placed at his service and on board her he made a cruise of the Mediterranean Sea. He then visited Bombay and Calcutta in India, Hong Kong, Canton and Peking in China, and finally Japan. On Sept. 20, 1879, he arrived at San Francisco, where a magnificent demonstration was made in his honor and during his route E. he was given public receptions and greeted with every mark of honor wherever he stopped.

He was placed on the retired list of the army by a special act of Congress in March, 1885, with the rank and pay of General. During the last few months of his life he wrote his "Memoirs," which was published soon after his death, on Mount McGregor, near Saratoga, N. Y., July 23, 1885. The construction of a magnificent mausoleum for his remains was begun in Riverside Park, New York city, on April 27, 1891, and it was dedicated on April 27, 1897, in the presence of one of the greatest concourses of people and with one of the greatest parades ever witnessed in the United States. The mausoleum exclusive of steps and portico projections is about 100 feet square at the base and the height 160 feet from the ground and nearly 300 feet from the level of the Hudson river. There is an outer gallery 130 feet above the base from which the country may be seen for miles around.

Julia Dent Grant, widow of General Grant, born in St. Louis, Missouri, Feb. 16, 1826, and married to the general, then a lieutenant, Aug. 22, 1848, died Dec. 14, 1902, and was laid to rest by the side of her distinguished husband in the mausoleum at New York. She was a most devoted wife, and to her was largely due General Grant's ability to grasp the opportunities offered him.

Grant Land, a North Polar region, lying N. of Grinnell Land, between lat. 81° and 83° N., discovered by Hayes, Hall, and Nares, in 1875, and partly explored by Nares, who wintered on its coasts, in the most N. latitude in which the winter had been passed by any ship.

Grant University, a coeducational institution in Chattanooga, Tenn., with departments also in Athens, Tenn.; founded in 1867, under the auspices of the Methodist Episcopal Church.

Granville, George Leveson-Gower, 2d Earl, an English statesman; born in London, May 11, 1815. In 1880 as foreign secretary under Mr. Gladstone he displayed considerable diplomatic skill in matters relating to the Berlin treaty, the occupation of Tunis, and the revolt of Arabi Pasha in Egypt. He retired with his chief in 1885, but returned once more to office as colonial secretary in 1886, resigning again with his colleagues in August of the latter year. He died in London March 31, 1891.

Grape, the fruit of the vine, or the plant itself. The native country of the vine is the region around the Caspian Sea, extending through Armenia as far W. as the Crimea. It has been cultivated from the remotest antiquity (Gen. ix: 20). It flourishes in the United States, Turkey, Greece, Italy, Spain, France, Germany, and Great Britain.

Grapeshot, a spherical iron shot, rather less than half the diameter of the bore of the piece for which they are intended, and put up in stands consisting of three tiers of three shot each; the stand has a circular cast-iron plate at top and bottom, connected by a bolt and nut.

Graphite, a hexagonal mineral, crystallizing in flat six-sided tables. Color, iron-black to dark steel gray, with a metallic luster and a black shining streak. Composition: Carbon, either pure with an admixture of iron, or occasionally of silica, alumina, and lime. It is popularly called black lead, though there is no lead even as an impurity in its composition. The product is used for the manufacture of pencils.

Graphophone, an apparatus for reproducing sound; invented by Charles Sumner Tainter in 1880. It is constructed on the principle of the phonograph, with a main cylinder, coated with wax, which revolves against the point of a needle. This in turn connects with a diaphragm at the end of a tube running from the funnel mouthpiece. When words are spoken into the mouthpiece the vibrations of the diaphragm cause the needle to make a record on the wax cylinder. When the machinery is reversed, the sounds are thrown out in their original form.

Grass, a very extensive and important order of plants, comprising about 250 genera and 4,500 species, including many of the most valuable pasture plants, all those which yield grain, the sugar-cane, bamboo, etc. In its popular use the term grass is chiefly applied to the pasture grasses as distinct from the cereals, etc.; but it is also applied to some herbs which are not in any strict sense grasses at all, rib-grass, scurvy, and whitlow grass.

Grasse-Tilly, Francois Joseph Paul, Count de, a French naval officer; born in Volette, France, in 1723; joined the navy in 1734. He was given command of a French fleet early in 1781 and ordered to aid the Americans. In April of that year he sailed with a fleet of 29 vessels and 3,000 troops for Chesapeake Bay; blockaded the James and York rivers, and landed his troops to prevent the retreat of Cornwallis. In October the combined forces of the Americans and the French compelled the surrender of Cornwallis, and Grasse with other officers received the thanks of the American Congress. He died in Paris, France, Jan. 11, 1788.

Grasshopper, the name of various leaping insects nearly akin to the locusts. They are characterized by very long and slender legs, the thighs of the hinder legs being large and adapted for leaping, by large and delicate wings, and by the wing-covers extending far beyond the extremity of the abdomen. Grasshoppers form an extensive group of insects, and are distinguished by the power which they possess of leaping to a considerable distance, and by the stridulous or chirping noise the males produce by rubbing their wing covers together. They are generally of a greenish color.

Gratacap, Louis Pope, an American scientist; born in Brooklyn, N. Y., Nov. 1, 1851; was graduated at the University of New York in 1869, and at the Columbia School of Mines in 1876; and has been engaged since in making geological and mineralogical investigations.

Grattan, Henry, an Irish statesman; born in Dublin, July 3, 1750; graduated at Trinity College, and went to London to study and practise law. In 1772 he was called to the bar and three years after entered the Irish House of Commons.

He immediately became distinguished in the opposition and infused that spirit into the country, which in two years aroused 80,000 volunteers and produced in 1782 a repeal of the statute of 6th George I., which had enacted that the crown of Ireland was inseparably connected with that of Great Britain; that Ireland was bound by British acts of Parliament when named therein; that the Irish House of Lords had no jurisdiction in matters of repeal; and that the last resort in all cases of law and equity was the British House of Lords. For his share in the acquirement of this concession the Irish Parliament in a burst of national enthusiasm, voted him £50,000 and a house and lands for him and his heirs forever. At the opening of the century when the union was carried Mr. Grattan entered the House of Commons, being elected for Malton, Yorkshire, in 1805, and in the following year for Dublin. Died in London, June 4, 1820.

Gratz, a city and capital of Styria, Austria, 141 miles S. S. W. of Vienna. Of the former fortress, erected on a hill in the center of the town, and dismantled in 1809 by the French, two towers and other remains still exist. The town itself contains several old buildings, as the Late Gothic cathedral (1462), two other Gothic churches (one built in 1283), the ancient castle of the Styrian dukes, the Landhaus, where the nobles of the duchy held their meetings, the university, originally founded in 1586, an armory, palaces of the Styrian nobles, and four monasteries dating from the 16th and 17th centuries. Pop. (1900) 138,080.

Grave Creek, formerly Moundsville, a city and county-seat of Marshall co., W. Va.; on the Ohio river. Moundsville received its name from the Mammoth Mound in the vicinity, one of the largest remains of the mound builders in the United States.

Gravedigger, a name given in Jamaica to a fossorial insect which digs holes in clay in which it lays its eggs, depositing along with them, for the future sustenance of its larvæ, caterpillars and spiders slightly stung, so as to leave them half dead.

Grave Mound, in anthropology, extensive mounds, occurring in various portions of North America, especially in the Ohio and Mississipp valleys, in which aboriginal remains flint arrow-heads, and pottery are found. These mounds are supposed to have been formed by a race who preceded the Indians in their occupancy of this country, and who are now distinguished only by the indefinite name of Mound Builders.

Gravel, small pebbles, stones, or fragments of stone, intermixed with sand, loam, clay, flints, etc., formed by the action of water upon disintegrated portions of rock.

In pathology, the presence of minute concretions in the urine.

Gravelines, a town in the department of Nord, France. Considerable historical interest is attached to the place, as the scene of Egmont's victory over the French (1558), and the place off which the English dispersed the Armada (1588).

Grave Post, a board fixed at the head of the graves of many Indian tribes. It usually contains the totem of the deceased; and should the tomb be that of a warrior, devices denoting how often he had been in war parties and the number of scalps he had taken are also placed in it.

Gravesend, a port and borough of Kent, England, on the Thames, 24 miles E. S. E. of London. Gravesend forms the limit of the port of London; and here pilots and customhouse officers are taken on board of vessels going up the river. For centuries its prosperity has depended upon its connection with London.

Graviere, Jean Pierre Edmond Jurien de la, a French military historian; born in Brest, France, Nov 19, 1812; served with distinction in several military expeditions. His numerous works include, "The Navy of the Ancients and the Campaigns of Alexander"; a great work which places the author in the front rank of military historians. He died in Paris March 5, 1892.

Graving Dock, a dock into which vessels are floated to have their bottoms examined and cleaned; a dry dock.

Gravitation, in physics, a natural force acting on all material bodies throughout the universe, with the effect of attracting or drawing them to each other. Hence it is often called the attraction of gravitation. It has been shown that every molecule of one body acts on every molecule of the other. Universal or general gravitation may be divided into celestial and terrestrial gravitation; but when the earth is viewed as a planet the second category disappears in the first.

Gravity, in physics, the terrestrial gravitation, the operation of the law of gravitation on the earth, especially in making heavy bodies fall in all parts of the planet in the direction of the center. Newton and Bressel have shown that in a vacuum a sovereign and a feather will fall with equal speed, though the rate will be very different in the atmospheric air. The weight of a body is proportioned to the attraction which it exerts, hence gravity in many cases means simply weight.

Gray, Asa, an American botanist; born in Paris, Oneida co., N. Y., Nov. 18, 1810. He took his degree of M. D. in 1831, but soon relinquished the practice of medicine, and devoted himself to botany. In 1842 he became Fisher Professor of Natural History at Harvard. In 1873 he retired from the chair, but still retained charge of the great herbarium he had presented to the university in 1864; and in 1874 he succeeded Agassiz as a regent of the Smithsonian Institution. He ranked among the leading botanists of his age, and became an influential supporter of the Darwinian theories of evolution. He died in Cambridge, Mass., Jan. 30, 1888. As a little child Asa Gray drove a horse for the bark mill in a tannery. He went to the country school when three years old. He has a place in the Hall of Fame of New York University.

Gray, Elisha, an American inventor; born in Barnesville, O., Aug. 2, 1835; was educated at Oberlin College. He designed a self-adjusting telegraph relay in 1867 and a little later invented the telegraphic switch and annunciator for hotels, the telegraphic repeater, the private telegraph line printer, etc. In 1876 he claimed the invention of the telephone, but after a notable contest the courts decided in favor of Alexander Graham Bell. In 1893 Professor Gray brought out his telautograph, by which written messages could be transmitted over the telephone and the telegraph. He was the founder of the Gray Electric Company in Highland Park, Ill., and in 1893 organized and was chairman of the Congress of Electricians at the World's Columbian Exposition. Died in Newtonville, Mass., Jan. 21, 1901.

Gray, Horace, an American jurist; born in Boston, Mass., in 1829; was graduated at Harvard in 1845, and its law school in 1849; admitted to the bar in 1851, appointed reporter of the Massachusetts Supreme Court in 1854 and served until 1862; associate-justice of the Massachusetts Supreme Court, 1864–1873, and chief-justice 1873–1881, when he was appointed successor to Judge Clifford in the United States Supreme Court. Died Sept. 15, 1902, at Nahant, Mass.

Gray, John Edward, an English naturalist; born in Walsall, Staffordshire, England, Feb. 12, 1800. To him belongs the merit of having made the zoölogical collections of the British museum the most complete in the world. He died in London, March 7, 1875.

Gray, Joshua, an American inventor; born in Sheffield, Vt., May 4, 1824; received a common school education; became connected with the Manchester (N. H.) Locomotive Works, and while there designed a system of quick-steaming boiler tubes. His other inventions include the rubber-tipped lead pencil, a breech-loading magazine rifle, a seven-armature dynamo, a railroad signal, and a sewing machine shuttle. He died in Medford, Mass., June 25, 1899.

Gray, Thomas, an English poet; born in London, England, Dec. 26, 1716. He was educated at Eton, and Peter House, Cambridge, and entered at the Inner Temple, with a view of studying for the bar. He occupied himself with literary work which he was slow to publish. It was only in consequence of the printing of surreptitious copy, that, in 1751, he published his "Elegy Written in a Country Churchyard." He declined the office of laureate on Cibber's death in 1757; and the same year published his odes "On the Progress of Poesy" and "The Bard." In 1768 the Duke of

Grafton presented him with the Professorship of Modern History at Cambridge. He died in Cambridge, England, July 30, 1771.

Gray, Thomas, an American educator; born in Lochgelly, Scotland, Feb. 4, 1850; was graduated at Glasgow University in 1878; instructor of electric engineering in the Imperial College of Engineering, Tokio, Japan, in 1879–1881; and represented the engineers, Lord Kelvin and Prof. Fleming Jenkin during the manufacture and placing of the Mackay-Bennett cable. Later he was made director of the Department of Mechanics and Electrical Engineering in the Rose Polytechnic Institute, of Terre Haute, Ind.

Graydon, James Weir, an American inventor; born Jan. 18, 1848; was graduated at the United States Naval Academy; served throughout the Civil War in the Union army under Sherman and Grant; was later promoted lieutenant in the navy, and resigned. His inventions include a dynamite gun; the gigantic wheels; an aerial torpedo; a system of torpedoes; and a railway carriage heater.

Grayling, a genus of fresh-water fishes in the salmon family, distinguished from trout, etc., by the smaller mouth and teeth, and by the long, many-rayed dorsal fin. The genus is represented by five species inhabiting clear streams in North America, Europe and Asia.

GRAYLING.

Gray Owl, the tawny-owl of North America.

Gray's Inn, one of the four Inns of Court, in London.

Gray's Peak, a peak in the Colorado range, in Colorado, and one of the highest in the Rocky Mountains. Its height is 14,341 feet.

Great Basin, a remarkable triangular plateau of North America, occupying the W. portion of Utah and nearly the whole of Nevada, as well as a section of Oregon and California, and extending at its N. E. angle into Idaho. It is bounded on the W. by the Sierra Nevada, and on the E. by the Wahsatch Mountains. The base of the triangle, in the N., is some 500 miles from E. to W.; it extends from N. to S. for nearly 800 miles and its area is slightly greater than that of France. It is girdled round on every side by high mountains, and traversed throughout by numerous ranges, frequently parallel, yet as often irregularly blending or crossing; the valleys are usually sinks, the chief drainage center being Great Salt Lake and the Humboldt and Carson sinks at about the same elevation. The plateau is nearly destitute of trees and in general only the upper parts of the valley are clothed with desert shrubs, their lower portions often being occupied either by bodies of water or by a muddy bottom covered with several inches' depth of alkaline salts left by evaporation.

Great Eastern, an English iron steamship, before the "Celtic," the largest vessel constructed, built (1854-1858) at Milwall, on the Thames, for the Eastern Steam Navigation Co. length 680 feet; breadth, 82½, or, including paddle-boxes 118 feet. From the first her career was unfortunate the launching process alone lasting three months and costing $300,000 After several unremunerative trips to New York she was employed first as a troopship, and then as a cable-laying ship, for which her size and steadiness specially qualified her. Various attempts were afterward made to utilize her, but she at last came to be a mere holiday spectacle, and was broken up in 1888.

Greater Britain, the entire territory, subject to the English crown, including the colonial dependencies of the British Empire; in area these many times surpass the mother country. See British Empire.

Great Fish River, (1) Great Fish river, or Back's river, in North America, enters an inlet of the Arctic Ocean in lon. 95° W., after passing through Lake Pelly. (2) In Cap

Colony, a river rising in the Sneeuwberg Mountains, and entering the Indian Ocean.

Great Lakes, the name given to that chain of lakes lying on the N. borders of the United States; they include Lakes Superior, Michigan, Huron, Erie, and Ontario.

Great Salt Lake, in Utah, a sheet of water stretching along the W. base of the Wahsatch Mountains, about 4,200 feet above the sea, forming a principal drainage center of the Great Basin. Well-marked shore-lines on the mountains around, reaching 1,000 feet higher than the present level, show that the lake had formerly a vastly greater extent. Great Salt Lake is over 80 miles long and from 20 to 32 broad, but for the most part exceedingly shallow. It contains several islands, the largest, Antelope Island, about 18 miles long. Great Salt Lake has no outlet save evaporation, and its clear water consequently holds at all times a considerable quantity of saline matter in solution; in 1850 the proportion was 22.4 per cent., in 1859 it was only 14.8. Between these dates the annual tribute exceeded the evaporation, and the area of the lake increased from 1,700 to 2,360 square miles; more recently, it has again been slowly receding. Several species of insects and a brine-shrimp have been found in its waters, but no fishes; large flocks of water-fowls frequent the shores. The first mention of Great Salt Lake was by the Franciscan friar Escalante in 1776, but it was first explored and described in 1843 by Fremont. A thorough survey was made in 1840–1850 by Capt. Howard Stansbury, U. S. A.

Great Slave Lake, a body of water in the Canadian Northwest Territory (62° N. lat.); greatest length about 300 miles, greatest breadth 50 miles. It discharges by the Mackenzie river into the Arctic Ocean.

Great South Bay, an arm of the Atlantic Ocean on the S. coast of Suffolk co., Long Island, N. Y.; 50 miles long, from 1½ to 5 miles wide. Great South Beach, which is about 35 miles long,. and has Fire Island Lighthouse on the W. extremity, separates it from the ocean.

Greaves, armor for the legs made of metal, and lined with some soft material. They were fastened with straps and ankle rings, and were richly ornamented and embossed.

Grebe, the common name of the birds characterized by a straight conical bill, no tail, tarsus short, toes flattened, separate, but broadly fringed at their edges by a firm membrane, and legs set so far back that on land the grebe assumes the upright position of the penguin. The geographical distribution of the genus is very wide, these birds haunting seas as well as ponds and rivers. They are excellent swimmers and divers, feed on small fishes, frogs, crustaceans, and insects. Nine species are North American, some of them (crested grebe, horned grebe) being the same as those of Europe. The great crested grebe is about 21 to 22 inches long, and has been called satin grebe from its beautiful silvery breast plumage, much esteemed as material for muffs.

Grecian Architecture, the styles of architecture which prevailed in Greece and its colonies up to the conquest of the country by the Romans.

Greco-Turkish War, The, a war which took place between Greece and Turkey in 1897. On Feb. 3, 1897, the Turkish troops in Crete wantonly pillaged and massacred a large number of Christians. About 15,000 Greek women and children fled to Greece, where the people had to provide for them. In the meantime the Cretans proclaimed their independence of Turkey, their union with Greece, and appealed to that country for help. This action led King George of Greece to send a small army to occupy the island, a movement which was opposed on the part of the Powers by whom the island was blockaded March 17, 1897. After a demand was made that the Greek troops be withdrawn from Crete, which was not complied with, the Powers landed soldiers and occupied the island. Soon afterward a body of Greek "irregulars" invaded Macedonia, whereupon the Turkish cabinet declared on April 17 that a state of war existed with Greece, and Edham Pasha, commander of the Turkish army, was ordered to take the offensive.

This issue was promptly accepted by Greece, and hostilities were at once begun on the Grecian frontier, which soon developed into a general cannonading along the entire frontier of Thessaly, while operations were likewise initiated on the sea. The Greeks, fighting their way northward, invaded Turkey and threatened Alassona, while the Turks swept down from Salonica through the mountain passes and invaded Greece, thus forcing the Greeks to abandon Larissa, their principal source of supplies. In the meanwhile the Greek navy was active, having bombarded and destroyed a number of important towns along the Gulf of Salonika. During the latter part of April and the beginning of May the Greeks were mainly victorious. A Grecian army of 12,000, under General Smolenski, repulsed a Turkish force of 14,000, with heavy loss, near Velestino, on April 30, and held in check another movement, May 2.

The tide, however, was soon turned, for on May 5 the Turks, with 50,000 men, compelled an army of 23,000 Greeks to withdraw from Pharsalos. The Greeks now became aware that they could not cope with the constantly increasing Turkish army, and this conviction with the knowledge that the country was without funds, disheartened the soldiers and caused the army to collapse. On May 8 the Powers were informed that the Greek troops would be recalled from Crete, thus signifying that Greece was ready to be guided by the Powers.

On May 11 a joint note was sent to the Greek minister of foreign affairs offering mediation, and on May 12 a request for an armistice was sent to the Turkish government. Four days later that country replied that it would not allow an armistice except on the following conditions: Annexation of Thessaly; an indemnity of £10,000,000; abolition of the capitulations or treaties conferring privileges on Greeks in the Turkish empire; and a treaty of extradition with Greece. These harsh terms met with a protest from all Europe. The Czar of Russia now wrote a personal letter to the Sultan, with the result that hostilities immediately ceased, and on May 20 an armistice for 17 days was concluded.

The question of the cession of Thessaly was referred to a military commission, which recommended no cession beyond the mountain summits on the Turkish frontier, which gave to Turkey a strategic boundary. Negotiations were finally concluded on Sept. 18, when a treaty was submitted to Turkey and Greece. The principal terms of this treaty were that Greece should pay Turkey about $15,000,000; permit a strategic reconstruction of the Thessalian frontier in Turkey's favor; and accept international control in financial matters. This treaty was signed at Constantinople, Dec. 4, 1897.

Greece, Ancient Greece, known to its own people as Hellas. Ancient Greece was intermediate in the history of human progress, between Egypt and Rome. It was not great enough for a world-power, and it may be said broadly that only through Rome has Greece left an impress on modern times. The people of Greece achieved a high degree of culture, in some respects not surpassed to this day, although their democracies were in no instance of the modern type, but only civic organizations, holding the rural districts and residents in an inferior and more or less servile position. Athens, the seat of culture, eventually fell, after a long struggle with Sparta, the seat of military power, where everything was subordinated to the fighting element; and both states, as well as the other commonwealths of Greece, were so weakened by the conflict that they became easy prey to Macedon under Philip and Alexander. The most precious gifts of Greece to mankind are the examples of heroism which its history offers, and its splendid literature, not surpassed to this day in beauty of thought and imagery. The several states and the greater men of Greece are treated under their respective names. To the Greeks also we owe the development of written language, and examples of the arts of painting and sculpture that have never been surpassed. Physically as well as mentally the ancient Greeks were among the best types of mankind. They never quite rose above the nature-worship of their old mythology, but the teachings of their philosophers show that the idea of one supreme, all-controlling God was taking firm root in the Greek mind at the higher stage of its development, and that the heathen deities were regarded quite generally as creatures of imagination, made sacred chiefly by ancient and venerable associations, and cherished largely through selfish motives as in the case of the silversmiths of Ephesus and the goddess Diana. But for the stern militarism of Rome, however, Greece, its traditions and its arts, would probably have been overwhelmed in oblivion by the hordes of barbarians who, near the close of the republican period, were driven back to their native forests by the Roman legions, but against whom the degenerate successors of Alexander would doubtless have contended in vain.

HENRY MANN.

Greece, Modern (Greek, Hellas), a kingdom in the S. E. of Europe, corresponding, since the incorporation of Thessaly, very nearly to ancient Greece in the narrower sense; bounded on the N. by Turkey, and on all other sides by the sea — Ionian Sea on the W., the Mediterranean proper on the S., and the Ægean Sea on the E. The mainland forms two chief portions, united by the narrow Isthmus of Corinth; a N., called Northern Greece or Livadia, and a S. peninsula, called the Peloponnesus or Morea. By far the largest island is Eubœa, only separated from the mainland of Livadia by the narrow channel of Euripo. The other islands form several groups. The area of modern Greece is about 25,014 square miles, and the population 2,433,806. Athens is the capital.

As first drawn up by the allied powers in 1830 the Greek monarchy was nearly absolute, but in 1844 and again in 1864 important modifications were made. As settled by the present constitution the throne is hereditary according to the law of primogeniture in the family of King George. The king must be a member of the Greek Church. He attains his majority at the age of 18. The legislative authority is vested in a single chamber, called the Boule, the members of which (proportioned in number to the amount of the population) are elected for four years by ballot by manhood suffrage. The executive power is exercised by the king through a responsible ministry. The Greek Church alone is established, but all other forms of religion enjoy toleration. The highest ecclesiastical authority, subject to the king, is vested in a permanent synod which sits at Athens and consists of five members appointed by the king from the highest dignitaries of the Church. There is 1 metropolitan, who has his seat in Athens, 21 archbishops, and 29 bishops, who are presented and ordained by the synod, and confirmed and invested by the king.

Every male Greek on attaining the age of 21 years is liable to military service, his term being 2 years with the colors, 10 with the reserve, 8 in the national guard, and 10 in the national guard reserve. The army in 1900 numbered about 25,000 on a peace footing, expanding easily to 82,000 in time of war. The navy in 1900 consisted of 5 armor-clad ships, 51 torpedo boats, besides several unprotected gun vessels and cruisers.

The population contains a considerable intermixture of foreign stocks, among which the Albanese, or Arnauts, are most numerous; but the great majority, though not without some taint in their blood, are of genuine Greek extraction, and both in physical and mental features bear a marked resemblance to their celebrated forefathers. It is true that the degrading bondage to which they were subjected for centuries has sunk them far below their natural level, and too often substituted sycophancy and low cunning for the intellectual superiority which, in earlier and better times, displayed itself in immortal productions of the chisel and the pen; but that the original elements of greatness still exist has been proved by the noble struggles which they have made for independence. The educational system of Greece, organized in 1834 by George Gennadius, one of the leaders of the war of independence, is very complete. There are three grades of schools, the demotic or primary national schools, the Hellenic or secondary grammar schools, and the gymnasia, in which, it is asserted, the range and the level of the teaching are much the same as in a German gymnasium or in the upper parts of our public schools. In all three grades of schools education is gratuitous, and in the primary schools it is compulsory on all children between 5 and 12. There is a university at Athens, attended by nearly 3,000 students, many of whom come from districts under the rule of the Sultan. Thus far, however, education seems to be actually diffused among the people only to a limited extent, though the numbers that receive a university education are so great that many such young men find themselves without any proper sphere of employment, and are obliged to adopt the career of politician and place-hunter. Many of these are now, however, said to be finding better ways of turning their education to account through the rapid development of trade and industry. The national dress of the Greeks resembles the Albanian costume. In the men it consists of a tight jacket, generally scarlet, a white linen kilt in numerous folds, a bright-colored sash round the waist, and embroidered gaiters; in the women it consists of a vest or jacket fitting close to the shape, and a skirt, on the head a kind of fez or skull-cap.

From the year 1715 till 1821 the Greeks were subject to the domination of the Turks. In 1770, and again in 1790, they made attempts at insurrection, which, however, were speedily frustrated. In the early years of the 19th century a secret society was formed for the purpose of effecting their liberation from the galling yoke, and in 1821 they found an opportunity of breaking out into another insurrection which in the end proved successful. In that year Ali, the Pasha of Janina, revolted against the Sultan Mahmoud II., and secured the aid of the Greeks by promising them their independence. The rising of the Greeks took place on March 6, under Alexander Ypsilanti, and on Jan. 1, 1822, they published a declaration of independence. In the same year Ali was assassinated by the Turks, but the Greeks nevertheless continued the struggle that they had begun, and in which they were encouraged by the sympathy of nearly all the nations of Europe. Among the most distinguished of their leaders were Marcos Bozzaris, Capo d'Istria, Constantine Kanaris, Kolocotroni, Miaulis, Mavrocordato, Mavromichaelis, etc. In 1823 they were joined by Lord Byron, who, during the last year of his life, did all in his power to further their cause by his wealth, as well as by his active efforts on their behalf. Unfortunately he died in the April of the following year. In 1825, the Turks having called to their aid Mehemet Ali, the Pasha of Egypt, the latter sent his son, Ibrahim Pasha, whose talents secured them the success that they had hitherto been unable to attain. Tripolitza, the capital of the Morea, was taken, as was also Missolonghi, in spite of the valor of the Suliote mountaineers. It was about this time that the Greek patriots received the aid of the English admiral Lord Cochrane, who organized their fleet, and of the French Colonel Fabvier, who instructed their army in the system of European tactics. In spite of this, however, the Turks continued to triumph everywhere, and resisted all the pressure that was put on them by other European powers to make concessions.

A treaty was then concluded at London (July 6, 1827) between Great Britain, France, and Russia, for the pacification of Greece, and when the mediation of these three powers was declined by the Sultan, their united fleets, under Admiral Codrington, attacked and annihilated the Turkish fleet off Navarino, Oct. 20, 1827. In the beginning of the following year (1828) Count Capo d'Istria became president of the State, and later on in the same year Ibrahim Pasha was forced to evacuate Greece. At last, on Feb. 3, 1830, a protocol of the allied powers declared the independence of Greece, which was recognized by the Porte on April 25, of that year. The new member of the States of Europe received from the allies a monarchical form of government, and offered the crown to Leopold, Prince of Saxe-Coburg, and when he refused it, to Otho, a young prince of Bavaria. The latter accepted the offer, and was proclaimed King of the Hellenes at Nauplia on Aug. 30, 1832. The power of the king was at first almost absolute, and his arbitrary measures, and more especially the preponderance which he gave to Germans in the government, soon made him unpopular. At the same time the finances of the kingdom were in a very embarrassed condition, and a general uneasiness prevailed. In 1843 a rebellion took place, after which a constitution was drawn up. But Otho was after that no more popular than before, and after the outbreak of another rebellion in February, 1862, he saw himself compelled to abdicate the throne (Oct.

24). A provisional government was then set up at Athens, and the National Assembly, after declaring that the throne had been forfeited by Otho, offered it in succession to Prince Alfred of England and Prince William George of Denmark. The latter accepted it, and on March 30, 1863, was proclaimed King George I. At the end of that year a constituent assembly was elected for the purpose of framing a new constitution, and the result of its labors was the constitution which is still in force.

In 1864 an addition was made to the small kingdom by the annexation of the Ionian Islands which had hitherto formed an independent republic under the protection of Great Britain. From the first Greece has been watching for an opportunity of extending its frontier N., so as to include the large Greek population in Thessaly and Epirus. In January, 1878, during the Russo-Turkish War, Greek troops were moved into Thessaly and Epirus to the assistance of their brethren who had risen there, but on the remonstrance of England these troops were withdrawn. The treaty of Berlin made no definite provisions for any extension of the Greek territory, but in 1881 Turkey had to cede about 5,000 square miles of Thessaly to Greece. After the union of Eastern Rumelia with Bulgaria in 1885, war with Turkey was only prevented by the great powers. In 1896 an insurrection of the Christians in Crete led to the interference of Greece and to war with Turkey. The Turks speedily drove back the Greeks from the N. frontier and overrun Thessaly; and Greece was enabled only through the efforts of the great powers to obtain reasonable terms of peace. The recent internal political history of Greece relates mainly to her financial obligations. After the expulsion of the Turkish troops from Crete in 1898 the Crown Prince George was appointed high commissioner of the island.

Modern Greek, as spoken by the uneducated classes, is called Romaic, from the fact that it took on its special character at the time when the Greeks considered themselves as natives of the Roman empire, and hence called themselves Romaioi, or Romans. The Greek of the educated classes, that used in the newspapers and other literature of the present day, is distinguished from it by a greater resemblance to the Greek of antiquity, which renders it easy for any one who has a satisfactory acquaintance with ancient Greek to read the literary Greek of the present day.

Greek Church, the Eastern Church, that of the old Eastern empire, which prior to the Turkish conquest, had its metropolis at Constantinople, as distinguished from the West Church, which had its capital at Rome; the church of the people speaking the Greek language rather than that of the Roman nation.

The first variance between the East and the West arose in the 2d century regarding the time of keeping Easter. The disputes which succeeded were chiefly as to personal dignity. As long as Rome was the metropolis of the empire, the Bishop of Rome had indisputably the most important see in the Church; but when, on May 11, 330, Constantine removed the seat of government to Byzantium (Constantinople), the bishop of the new metropolis became a formidable rival to his ecclesiastical brother at Rome. In the second General Council, that of Constantinople, 381, the Bishop of Constantinople was allowed to sit next to the Bishop of Rome; by the 28th canon of the Synod of Chalcedon, 403, he was permitted to enjoy an equal rank. In 588, John, Patriarch of Constantinople, assumed the title of œcumenical or universal bishop, for which he was denounced by Pope Gregory the Great. The last General Council in which the Churches of the East and the West were united was the Seventh, or Second Council of Nice, 787. The feud continued through the 9th and on to the 11th century. In the 13th an effort was made by Michael Palæologus to promote a reunion of the two great Churches at the Council of Florence, but all was in vain. They have remained separate till now. Efforts are said to be on foot looking to the union of the Greek and Roman Churches.

The Bible as now interpreted by tradition is the rule of faith. Regarding the Trinity, the divinity of Christ, the Atonement, and the work of the Holy Spirit, the Greek Church holds the ordinary faith of Christendom. Regarding what is termed the procession of the Holy Ghost, the East holds that he proceeded from the Father only, while the Churches of the West believe that he did so from the Father and Son (fifth of the Thirty-nine Articles). With regard to the decrees of God, the Greek tenets are what would now be called strongly Arminian. Worship of a superior or of an inferior kind is rendered to the Virgin Mary, to saints and angels. The secular clergy are enjoined to marry once, and with a virgin. Images are in use. The communion is administered even to the laity in both kinds. The doctrine of purgatory is not accepted. Baptism is by immersion, and is followed by chrism or anointing. The government is episcopal. Excepting the Church of Rome, the Greek Church is the largest Christian organization, though it would be only the third if the several Protestant Churches were united into one. Its political importance arises mainly from the fact that the Emperor of Russia is regarded as its earthly head. It is the most numerous Christian body in the Turkish empire, and has a patriarch at Constantinople. It has many adherents also in the heterogeneous Austrian empire. The Russian Emperor Nicholas delighted to call it "the orthodox faith."

Greek Fire, a composition supposed to have been of pounded resin or bitumen, sulphur, naphtha (the principal ingredient), and probably niter, with which, from about 673 A. D. onward the Greeks of the Byzantine empire were wont to defend themselves against their Saracen adversaries. It was poured out, burning, from ladles on besiegers, projected out of tubes to a distance, or shot from balistæ, burning on tow tied to arrows. At Constantinople the process of making Greek fire was kept a profound secret for several centuries. Combustibles with a similar aim were used at the siege of Charleston in 1863, composed of sulphur, niter, and lampblack, and naphtha in shells was also tried.

Greeley, Horace, an American journalist; born in Amherst, N. H., Feb. 3, 1811. About 1825, his parents having removed to Vermont, Horace, who had always been a lover of books, obtained employment as an apprentice in a printing office for five years. He learned the business rapidly, became an accurate compositor; and later was intrusted with a portion of the editorial work on the "Northern Speculator" till the paper was suspended, when he was released from his apprenticeship, and worked with his father on the farm. He later decided to seek his fortune in New York, and arrived there in August, 1831, and secured occasional work as a journeyman printer in various offices. In 1834, in partnership with Messrs. Winchester and Gibbett, he started "The New Yorker," a weekly literary journal, which, after several years' trial proving unprofitable was abandoned, and in 1841 he commenced the publication of the New York "Tribune," a journal which has been eminently successful. In 1848 he became a member of the 30th Congress; in 1851 he visited Europe, and was chosen chairman of one of the juries of the Great Exhibition in London, and afterward published an account of his travels. He assisted his brother-in-law in editing "A Political Text-book"; and wrote "Glances at Europe," "Overland Journey to San Francisco," "Essays Designed to Elucidate the Science of Political Economy," "What I Know of Farming," "Hints Toward Reforms," "History of the Struggle for Slavery Extension" (1856); "The American Conflict" (1864-1866); "Recollections of a Busy Life" (1868). He ardently supported the Union cause during the Civil War. In 1872 he was nominated by the Democratic party a candidate for the presidency in opposition to General Grant, but he failed to be elected. His strong constitution became impaired by excessive toil and excitement. The loss of his wife, who was a hopeless invalid many years, served to complete the fatal work. He died in Pleasantville, Westchester Co., N. Y., Nov. 29, 1872.

Greely, Adolphus Washington, an American Arctic explorer; born in Newburyport, Mass., March 27, 1844. He served as a volunteer through the war of 1861-1865, and shortly after its conclusion entered the regular army as lieutenant, and in 1868 was placed on the signal service. In 1881 he was selected to conduct the American expedition to the head of Smith Sound, for the purpose of carrying on observations in pursuance of the international scheme arranged at Hamburg in 1879. He and the survivors of his party were rescued in June, 1883, when at the point of perishing from starvation, after spending three winters in the Arctic regions. Their sufferings were so extreme that some of the party had even been reduced to eating the bodies of the dead. Lieutenant Lockwood of this expedition traveled to within 396 miles of the geographical pole, the farthest point N. hitherto reached. In 1887 Greely was appointed chief of the signal service, with the rank of a Brigadier-General. He wrote "Three Years of Arctic Service."

Green, Andrew Haswell, born at Green Hill, Worcester co., Mass., Oct. 6, 1820; a lawyer by profession, and known as "The Father of Greater New York," on account of his leading part in bringing about the consolidation of the former cities, towns and villages which now constitute New York city. Mr. Green is the greatest municipal builder that America has produced, and he has extended his activities in some degree also to the State, having virtually created the State Reservation at Niagara Falls. Entering prominently into public life about the middle of the 19th century he had complete charge, as Comptroller of the Park, of the construction of Central Park, New York, disbursing many millions in the work, without a discrepancy of even one cent. He then virtually laid out the magnificent upper West Side of New York, with its broad avenues and parks, and with wonderful foresight of the growth of population. His known integrity led to his selection as Comptroller of the city after the fall of the Tweed ring, and during an arduous struggle of about five years he brought civic finances from chaos to order and prosperity. He originated the Museum of Art, the Natural History Museum, and the Zoölogical and Botanical Gardens. He labored unceasingly for consolidation, which was accomplished in 1897, and he continues at an advanced age, while managing the Ogden estate and other great interests to devote his energies largely to the public welfare. The New York Public Library, in which the Astor, Lenox and Tilden libraries are consolidated, owes its origin to Andrew H. Green, who has always been deeply interested in education, and who from the first urged and provided for the largest possible use of Central Park by children of the public schools. Mr. Green has never been married.

Green, Anna Katherine, the maiden name and pseudonym of Mrs. Rohlfs, an American author; born in Brooklyn, N. Y., Nov. 11, 1846. She graduated at Ripley (female) College, Poultney, Vt., 1867. Her novels are detective stories, and enjoy great popularity.

Green, John Richard, an English historian; born in Oxford in 1837; received his early education at Magdalen College School and gained a scholarship at Jesus College. Immediately after taking his degree in 1860 he was appointed curate of St. Barnabas, King Square, in the East End of London, and in 1866 to the vicarage of St. Philip's, Stepney. While still continuing his historical studies he never neglected his parish duties — duties made infinitely more arduous by the visit of the cholera in 1868. Soon after that year, however, the state of his health compelled him to resign his living, and he was appointed to the post of Lambeth librarian by Archbishop Tait. His work as librarian occupied but little of his time, and he now collected and digested the materials for a projected history, which was completed and published in 1874 under the title of "A Short History of the English People." The author recast it on a larger scale, the new book appearing at intervals between 1877 and 1880 in 4 vols. In recognition of his literary ability his college at Oxford made him an honorary fellow, and the University of Edinburgh gave him the degree of LL. D. In 1881 was published his last important work, a volume on the beginnings of English history, entitled "The Making of England," which is one of the most valuable works of its kind in the language. In spite of repeated winter visits to the Continent he never recovered sound health, and on May 7, 1883, he died in Mentone.

Green, Seth, an American pisciculturist; born in Irondequoit, N. Y., March 19, 1817. To him is due the entire credit of having been the first to make the reproduction of shad possible. The Seth Green shad-hatching box was devised by him in 1867, and by its use the Connecticut river was restocked. In 1870 he became superintendent of the State hatchery at Caledonia, which position he held till his death in Rochester, N. Y., Aug. 20, 1888.

Green, William, an American clergyman and author; born in Groveville, N. J., Jan. 27, 1825; was graduated at Lafayette College in 1840 and at the Princeton Theological Seminary in 1846; was ordained in the Presbyterian Church in 1848; was made Professor of Oriental and Old Testament Literature at Princeton Theological Seminary in 1851; and was chairman of the Old Testament Committee of the Anglo-American Bible Revision Committee. In 1868 he declined the presidency of Princeton College. He died in Princeton, N. J., Feb. 10, 1900.

Green, William Mercer, an American clergyman and author; born in Washington, N. C., May 2, 1798; was graduated at the University of North Carolina in 1818; was ordained in the Protestant Episcopal Church; became Professor of Belles-Lettres in the University of North Carolina in 1837; and was consecrated first bishop of Mississippi in 1850. He died in Sewanee, Tenn., Feb. 13, 1887.

Green, the color of growing herbage; the color of the solar spectrum between blue and yellow; a secondary color composed of the primaries blue and yellow in different proportions.

Greenback Party, in the United States, called by its members the Independent National party, was organized in 1876, and was the outgrowth of the Granger and Labor Reform movements. Its convention at Indianapolis in May, 1876, "demanded the unconstitutional repeal of the Specie Resumption Act on Jan. 14, 1875"; urged the issue of United States notes as a circulating medium, and the suppression of bank paper; and protested against the further issue of gold bonds, and the purchase of silver to replace the fractional currency. Peter Cooper was nominated for President, and received 81,740 votes. In 1880 its candidate was James B. Weaver, who received 306,305 ballots. It has never gained any electoral votes. In 1884 the party indorsed the nomination of Benjamin F. Butler by the People's party, which polled 175,370 votes.

Greenbrier, a popular name in the United States for a very common thorny climbing shrub, having a yellowish-green stem and thick leaves, with small bunches of flowers.

Green Dragon, a North American herbaceous plant, one of the arum family, called also wake-robin.

Greene, Albert Gorton, an American lawyer and poet; born in Providence, R. I., Feb. 10, 1802. He wrote the famous poem "Old Grimes." Died in Cleveland, O., Jan. 4, 1868.

Green, Asa, an American author; born in Ashburnham, Mass., in 1788. He graduated at Williams College, and in 1827 received a degree from the Berkshire Medical School. He was a bookseller of the old-fashioned kind, and noted as a humorist. He served for some time as editor of the New York "Evening Transcript." He died in New York city in 1837.

Greene, Francis Vinton, an American military officer; born in Providence, R. I., June 27, 1850. He graduated from West Point in 1870, and served till 1886, when he resigned with the rank of captain. In the Spanish-American War (1898), he was commissioned a Major-General of volunteers and served principally in the Philippines.

Greene, George Sears, an American military officer; born in Warwick, R. I., May 6, 1801; was graduated at the United States Military Academy in 1823; resigned from the army in 1836, and engaged in civil engineering. In January, 1862, he was appointed Brigadier-General of volunteers, and from that time served through the Civil War, participating in many important actions. He was chief engineer of the public works in Washington, D. C., in 1871–1873; and planned the sewer system of that city. He died in Morristown, N. J., Jan. 28, 1899.

Greene, George Washington, an American historian, grandson of Gen. Nathanael Greene; born in East Greenwich, R. I., April 8, 1811. He died in East Greenwich, R. I., Feb. 2, 1883.

Greene, Nathanael, an American military officer; born in Warwick co., R. I., May 27, 1742. His school education was of the simplest and most limited character; but by his own industry he soon acquired a tolerable knowledge of the principal branches of an English education and made some progress in the study of law. On the commencement of the troubles between the colonies and Great Britain he volunteered as a private (1774); but the following year he was chosen, by the Assembly of Rhode Island, general of the contingent furnished by that colony to the army near Boston. He was made Major-General in the Continental army in 1776, and accompanied Washington on his brilliant expedition into New Jersey near the close of the same year. He performed a prominent part in the disastrous battle of Germantown (1777), on which occasion his courage and skill did much toward retrieving the reputation of the American arms. In 1778 he was appointed quartermaster-general and for more than two years he fulfilled the duties of that position with faithfulness and ability. After the defeat of General Gates (1780) at the battle of Camden, S. C., he was appointed to the command of the S. army, which he found demoralized and in a state of utter destitution. His presence soon restored the confidence of the troops. Through his skillful strategy, even his reverses produced the fruits of victory. In March, 1781, he was defeated by Lord Cornwallis in the hard-fought battle of Guilford Court House, but the English general derived no permanent advantages from this success. Cornwallis having retreated into Virginia, Greene defeated, after a severe action (September, 1781), the forces of Colonel Stewart at Eutaw Springs, and thereby put an end to the British power in South Carolina. This was the last battle in which General Greene was engaged, though he held his command till the end of the war. He died from the effect of a sunstroke at Mulberry Grove on the Savannah river, June 19, 1786.

Green Ebony, an olive-green wood obtained from a South American tree used for round rulers, turnery, marquetry work, etc., and also much used for dyeing.

Greenland, an extensive island belonging to Denmark; on the N. E. of the continent of North America, from which it is separated by Davis Straits, Baffin Bay, and Smith Sound; area 46,740 square miles; pop. 10,516, chiefly Eskimos. In June and July the sun is constantly above the horizon, the ice on the coast is broken up and floats S. and a few small lakes are opened; but the short summer is followed by a long and dreary winter. The interior, which is lofty, is uninhabitable, and all the villages are confined to the coasts, which are lined with numerous islands and deeply penetrated by fiords. Cultivation is confined to the low shores and valleys, where grassy meadows sometimes occur with stunted shrubs and dwarfed birch, alder, and pine trees. Attempts to raise oats and barley have failed, but potatoes have been grown toward the S. extremity. Turnips attain the size of a pigeon's egg, and cabbages grow very small. The radish is the only vegetable which grows unchecked.

The inhabitants are largely dependent on hunting and fishing. Whale blubber and seal oil are used as fuel. The land animals are the Eskimo dog, the reindeer, the polar bear, the Arctic fox (blue and white), the ermine, the Arctic hare, and the musk ox. Among the amphibia the walrus and several species of seal are common. The seas abound in fish, the whale and cod fisheries being of special importance. Seafowl are abundant in summer, and largely killed. The chief mineral product is cryolite, but graphite and miocene lignitic coal are also found. Oil, eider down, furs, and cryolite are exported. For administrative purposes Greenland, or rather its coast, is divided into two inspectorates of North and South Greenland. The residences of the inspectors are at Disco Island and Godhaab, but the most populous district is Julianshaab.

Greenland was discovered by an Icelander named Gunnbjorn about 876 or 877, and was colonized from Iceland about the end of the 10th century. In the reign of Elizabeth, Frobisher and Davis rediscovered the coast, but nothing was done to explore it till the Danish government in 1721 assisted Hans Egede, a clergyman, to establish a European mission settlement, Good Hope (Godhaab), which was successfully carried on by him and his son. Whale fisheries were established on the coast by the English and Dutch about 1590. The interior of the country was first crossed from E. to W. by Nansen in 1888.

Greenlet, a species of small birds, so called from having much green or olive in the colors of their plumage. They arrive in the United States from South America and the West Indies about the month of May, departing again in August.

Green Mountain Boys, a name applied to the male inhabitants of Vermont, from the chief range of mountains in the State, and used especially in referring to regiments from Vermont in the Revolution and the Civil War.

Green Mountains, a considerable mountain range commencing in Hartford co., Conn., and extending N. through Massachusetts and Vermont into Lower Canada. Length, about 240 miles. Their greatest elevation is in Vermont, where Mount Mansfield, or North Peak, rises to a height of 4,389 feet. The slopes are covered on the disappearance of the snow in spring with fine pastures of rich green grass, which may have given to the mountains their name, though this is commonly referred to the growth of evergreen forest trees, as the hemlock, balsam, fir, spruce, pine, cedar, etc., which abound upon the poorest land and along the margin of the streams.

Green Mountain State, a popular name for the State of Vermont, from its being crossed by the Green Mountains.

Greenough, Horatio, an American sculptor; born in Boston, Mass., Sept. 6, 1805. He studied for two years at Harvard, and from 1825 spent the greater part of his life in Italy. His principal work was the colossal statue of Washington in front of the National Capitol. He died in Somerville, Mass., Dec. 18, 1852.

Green River. (1) Rises in Western Wyoming, flows S. E. into Colorado, and then S. W. and S. through Utah, joining the Grand river, a branch of the Colorado, after a course of 750 miles. (2) Green river, Kentucky, rises near the center of the State, flows W. and N. W., entering the Ohio 9 miles above Evansville, Ind. It is about 350 miles in length; and is navigable for small steamers for 150 miles.

Green Sea, the Persian Gulf, so named from a remarkable strip of water of a bright green color along the coast of Arabia.

Greenville, a city and county-seat of Darke co., O., on Greenville creek. It is noted as the site of Anthony Wayne's treaty with the Indians.

Greenwich, a borough of the city of London, England, on the right bank of the Thames, 6 miles S. E. of London bridge. It contains a magnificent hospital for invalid seamen, built by Sir Christopher Wren (1696). The Royal Observatory, erected by Charles II., is under the charge of the Astronomer Royal, a position that has been filled by Flamsteed, Halley, Bradley, Bliss, Maskelyne, Pond, Airy, etc. The longitude of all English charts and maps is reckoned from this observatory, and the captains of ships take their time as given at 1 P. M.

Greenwood Cemetery, the principal necropolis of New York city and neighborhood, in East Brooklyn, L. I., E. of Gowanus Bay; area 475 acres. It occupies a picturesque site, and is laid out so handsomely as to make it almost without a rival in the world. From its heights the waters of New York Bay may be seen on the one hand and the broad expanse of the Atlantic on the other. There are 20 miles of roadway and more than 25 miles of footpaths. Its monuments are numerous and costly. The main gateway is adorned with four magnificent sculptures in alto relievo, representing four scenes in the resurrection. The number of interments up to 1901 exceeded 300,000.

Greer, David Hummel, coadjutor bishop of New York, with Bishop Potter, of the Protestant Episcopal Church. Dr. Greer was born March 20, 1844, at Wheeling, W. Va.; graduated from Washington College, Pennsylvania, 1862; studied theology at the Episcopal Seminary, Gambier, Ohio; was rector of Christ Church, Clarksburg, W. Va., of Trinity Church, Covington, Ky., of Grace Church, Providence, R. I., for sixteen years, and of St. Bartholomew's, N. Y., since 1888. Elected coadjutor bishop, Sept. 30, 1903, and accepted. Had previously declined a coadjutor bishopric of Rhode Island, bishopric of Western Massachusetts, and coadjutor bishopric of Pennsylvania.

Greer, James Augustin, an American naval officer; born in Cincinnati, O., Feb. 28, 1833; joined the navy in 1848. On April 16, 1863, he commanded the ironclad "Benton" in the fleet of Admiral Porter, when that officer forced his way past the Vicksburg batteries; in 1873 he commanded the "Tigress" in the search of the polar seas for the "Polaris," the wreck of which was found at Littleton Island, North Greenland. He was promoted rear-admiral April 3, 1892; and was retired Feb. 28, 1895.

Greey, Edward, an English-American story-writer; born in Sandwich, Kent, England, Dec. 1, 1835. After spending several years in Japan he came to the United States in 1868, and engaged in commercial pursuits and literature in New York. He died in New York city, Oct. 1, 1888.

Gregoire, Henri, the most remarkable among the "constitutional" bishops of France; born in Veho, near Luneville, France, Dec. 4, 1750. Educated by Jesuits at Nancy, he took orders, and lectured for some time at the Jesuit College of Pon-a-Mousson. One of the secretaries of the National Assembly, he supported enthusiastically the abolition of the privileges of the nobles and clergy alike, and the civil constitution of the clergy. He was the first of his order to take the oaths, and was elected the first constitutional bishop of the department of Loir-et-Cher. At the blasphemous Feast of Reason, the weak Gobel, constitutional Bishop of Paris, publicly renounced Christianity; but Gregoire faced the infuriated rabble with all the courage of the primitive martyrs, and refused to deny his Master. After the 18th Brumaire he became a member of the Corps Legislatif. His extreme republicanism was highly distasteful to Bonaparte, and it was only after a third attempt that he was appointed member of the Senate. On the conclusion of the concordat between Pius VII. and Bonaparte he ceased to exercise ecclesiastical functions, being unable conscientiously to give the retractations required by the Church. He died in Auteuil, near Paris, May 28, 1831.

Gregorian Calendar, the calendar as reformed by Pope Gregory XIII. in 1582. The Gregorian year is the ordinary year, as reckoned according to the Gregorian calendar.

Gregorian Telescope, the first and most common form of the reflecting telescope, invented by James Gregory in 1663.

Gregory, Patriarch of Constantinople; born in 1730. He studied at Mount Athos; lived as a hermit; was made archbishop at Smyrna, and, in 1795, Patriarch of Constantinople. In 1821, when the Greek insurrection broke out in the Morea, his native country, he became an object of suspicion to the Porte, and when, shortly after, he allowed the family of Prince Morousi to escape from his guardianship, he was seized as he left the church on the first day of the Easter festival and hanged in his robes of office before the church gate.

Gregory I., surnamed the Great, a Pope; born in Rome, about 544. He showed such abilities as a senator that the Emperor Justinus appointed him prefect of Rome, after which he embraced the monastic life in a society founded by himself. He was elected successor to Pelagius II. in 590. Pope Gregory was pious and charitable, had lofty notions of the papal authority, was a reformer of the clerical discipline, and after his death was canonized. His works are comprised in four volumes. He died in 604.

Gregory VII., Hildebrand, son of a carpenter; born in Soano, Tuscany, about 1020. He was the friend and counsellor of Leo IX. and the four succeeding Popes, and on the death of Alexander II. was elected to succeed him in 1073. He obtained confirmation in his election from the Emperor Henry IV., and immediately applied himself zealously to reform simony and the licentiousness of the clergy. In his view, however, marriage, no less than concubinage, was a sin in them. He menaced the emperor and the King of France, the latter without effect. In 1074 he assembled a council, by which it was forbidden the prelates to receive investiture of a layman; and this was the first step in the quarrel with the emperor, which lasted so many years. Henry, disregarding the papal authority, was summoned to Rome; but he held a diet at Worms and pronounced the deposition of the Pope. To this Gregory replied by procuring the deposition of the emperor and the election of another, Rudolph of Suabia. Henry now promised submission; and in the early winter of 1077 went with his wife and child to Italy. The Pope was at the castle of Canossa, and there, after keeping the penitent Emperor of Germany three days waiting at the gate, he received him and gave him absolution. The terms imposed on him were intolerable, and he soon broke them, made war on Rudolph, and defeated him, set up a rival Pope in Guibert, Archbishop of Ravenna, with the title of Clement III., and after several unsuccessful attempts entered Rome in 1084, had himself crowned emperor by his own Pope, and besieged Gregory in San Angelo. The Pope was delivered by Guiscard, and retiring to Salerno died there May 25, 1085.

Gregory XIII., Buoncompagno, a native of Bologna, and succeeded Pope Pius V. in 1572. He was deeply versed in the canon and civil law, and had distinguished himself at the Council of Trent. He ornamented Rome with many fine buildings and fountains; but his pontificate is chiefly memorable for the reformation of the calendar which took place under his auspices and bore his name. Died in 1585.

Gregory, John Milton, an American educator; born in Sand Lake, N. Y., July 16, 1822. He was State superintendent of public instruction in Michigan in 1858–1863; president of Kalamazoo College in 1863–1867; and president of the Industrial University in Champaign, Ill., in 1867–1880. Died in Washington, D. C., Oct. 20, 1898.

Gregory, St., surnamed Illuminator, the founder of the Armenian Church; born in Valarshabad, Armenia, about 257. From 302 to 331 he was Patriarch of the Armenian Church, but having resigned the patriarchate in favor of his second son Aristaces, Gregory in 331 retired to a cave at the foot of Mount Sebuh in Upper Armenia, where he died in 332.

Gregory Nazianzen, St., Bishop of Constantinople; born near Nazianzus, Cappadocia, in 326. He was made bishop of Constantinople by Theodosius in 380. He excelled all his contemporaries in pulpit eloquence. Many of his works are extant, and consist of orations, letters, and poems. After filling his high and difficult post for one year, he resigned and returned to his native place, where he died in 389.

Gregory of Tours, a Frankish historian; born in Arverna (now Clermont), Auvergne, France, about 540. He belonged to one of the most distinguished Roman families of Gaul. His fame rests on his "History, or Annals," the chief authority for the history of Gaul in the 6th century. He died in Tours, France, Nov. 17, 594.

Grenada, an island of volcanic origin in the British West Indies, lying N. by W. from Trinidad; area, 133 square miles; pop. (1900) 65,523. Some of the craters in the central ridge of mountains, rising to 3,000 feet, have been transformed into large lakes; streams and mineral springs abound; there are several good natural harbors. The inhabitants, who are almost all negroes, cultivate cocoa, coffee, and oranges; a little rum is manufactured, and spices and fruits are grown. Grenada has been a crown colony since 1885; previous to that date it had a constitutional government. Columbus was the discoverer of the island in 1498.

Grenfell, George, an English missionary; born about 1845. Next to Livingstone and Krapf, he deservedly ranks among the foremost of Africa's missionary travelers. He married a native African woman for his second wife.

Grenier, Edouard, a French poet; born in Baumes-les-Dames. Doubs, France, in 1819. He abandoned the diplomatic service for poetry. His lines on "The Death of President Lincoln" were crowned by the Academy.

Grenoble, a fortified town of France; capital of the department of Isere, on the Isere, 60 miles S. E. of Lyons. It has a cathedral, and a more noteworthy church, Saint-Andre, with the tomb of Bayard. Grenoble existed in the time of Cæsar; and Gratian, who had improved it, changed its name from Cularo to Gratianopolis. Pop. (1901) 68,052.

Grenville, George, an English statesman; born Oct. 14, 1712. In 1763 he succeeded Lord Bute as prime minister, uniting in himself the offices of Chancellor of the Exchequer and First Lord of the Treasury. The most prominent facts of his administration were the prosecution of Wilkes and the passing of the American Stamp Act, which first drove the American colonies to resistance. He resigned the premiership in 1765, and died in London, England, Nov. 13, 1770.

Gresham, Sir Thomas, an English financier; born in 1519; only son of Sir Richard Gresham. In 1569, by his advice, the State was induced to borrow money from London merchants instead of from foreigners, to the great advantage of the mercantile body. Having in 1564 lost his only son, Richard, in 1566–1571 he devoted a portion of his great wealth to the erection of an Exchange in imitation of that of Antwerp, for the London merchants, who were wont to meet in the open air. He provided for the erection and support of eight almshouses, and made many other charitable bequests. He died in London, England, Nov. 21, 1579.

Gresham, Walter Quinton, an American jurist; born near Lanesville, Harrison co., Ind., March 17, 1832. He became a member of the Indiana State Legislature in 1861; served in the Civil War, rising to Brigadier-General of volunteers; at its close resumed the practice of law, and in 1869 was appointed by President Grant United States District Judge for Indiana; in 1883 was appointed Postmaster-General by President Arthur; in 1884 became Secretary of the Treasury, and later was appointed one of the judges of the United States Circuit Court. He died in Washington, D. C., May 28, 1895.

Gretna Green, a village in Dumfriesshire, Scotland. After the abolition of Fleet marriages by Lord Hardwicke's Act (1754), English persons wishing to marry clandestinely had to get out of England. Thus the practice arose of crossing the border into Scotland, where Gretna Green had by 1771 become, in Pannant's words, "the resort of all amorous couples whose union the prudence of parents or guardians prohibits." In 1856 all irregular marriages were rendered invalid unless one of the parties had been residing in Scotland for three weeks previously; this proviso observed, a Gretna Green marriage is still possible.

Grevy, Francois Paul Jules, a French statesman; born in Mont-sous-Vaudry, in the Jura, France, Aug. 15, 1813. Grevy was chosen president of the National Assembly which met in 1871. In 1876, 1877, and 1879 he again represented the Jura in the French Parliament, and in the latter year he was chosen president of the republic by an enormous majority. In 1886 he was reëlected, but on account of a scandal in which his son-in-law was implicated was forced to resign, Dec. 2, 1887. He died in Mont-sous-Vaudry, Sept. 9, 1891.

Grey, Lady Jane, a Queen of England. She was the daughter of Henry Grey, Marquis of Dorset, afterward Duke of Suffolk, by the Lady Frances, daughter of Charles Brandon, Duke of Suffolk, and Mary, youngest sister of Henry VIII., in whose reign Lady Jane was born, according to the common account in 1537. She displayed much precocity of talent, owing her early proficiency in literature in some measure to her learned tutor, Aylmer, afterward Bishop of London; and from him she imbibed a lasting attachment to Protestantism. The tale of her elevation and catastrophe has been often related. The most material circumstances are her marriage with Lord Guildford Dudley, fourth son of the Duke of Northumberland, in May, 1553; which, though it originated in the ambitious projects of her father-in-law, was a union of affection. Edward VI. was induced on his deathbed to settle on her the succession to the crown. He died on July 5, 1553. The council endeavored to keep his death a secret, with a view to secure the persons of the Princesses, Mary and Elizabeth. Mary was apprised of their design and wrote them expressing her surprise that she had not been advised of her brother's death, and commanding them on their allegiance to proclaim her title. The council replied exhorting her to be quiet and obedient and proclaimed Lady Jane on the 10th. On the approach of Mary the council, who were unsupported in their usurpation, meanly deserted their victim Lady Jane, and joined in proclaiming Mary queen on the 19th, and on the 20th Lady Jane was confined to the Tower. On Nov. 13 she and her husband were arraigned and pleaded guilty of high treason; but their doom was suspended, and they might, perhaps, have been allowed to expiate their imprudence by a temporary confinement but for the ill-advised insurrection under Sir Thomas Wyatt, in which the Duke of Suffolk, Lady Jane's father, was weak enough to participate. The suppression of this rebellion was followed by the execution of Lady Jane Grey and her husband. Lady Jane resolutely defended her opinions against the arguments of the Roman divines sent to reason with her, and prepared herself with firmness for her approaching fate. She was beheaded on Tower Hill, Feb. 12, 1554, her husband having previously suffered the same fate.

Greys, a regiment of cavalry in the British army, originally Scottish, and so called from the horses being all of a gray color; they are also called the Scots Greys.

Gridley, Charles Vernon, an American naval officer; born in Logansport, Ind., in 1845; entered the United States navy in September, 1860; was promoted midshipman July 16, 1862; commander, March 4, 1868; and captain, March 12, 1868; and shortly after was ordered to the Pacific station. When he reached Hong Kong, China, he was placed in command of the cruiser "Olympia," the flagship of the Asiatic fleet. On the morning of May 1, 1898, Captain Gridley skillfully managed the "Olympia" during the engagement at Manilla Bay and delivered the broadside which destroyed the flagship of the Spanish fleet. Though very ill, he commanded his ship throughout the fight. Shortly after his sickness became more serious, and he was ordered home, but died on reaching Kobe, Japan, June 4, 1898.

Grieg, Edvard, a Scandinavian composer; born in Bergen, Norway, June 15, 1843. He went to London in 1888, where he both played and conducted.

Grierson, Benjamin Henry, an American military officer; born in Pittsburg, Pa., July 8, 1826. When the Civil War broke out he joined the Union army and in April, 1863, he successfully led a cavalry raid from La Grange to Baton Rouge, making much easier the operations of Grant against Vicksburg. He was promoted colonel of the 10th United States Cavalry in 1866, and brevetted Major-General, U. S. A., in March, 1867. In 1890 he was promoted Brigadier-General, U. S. A., and retired.

Griesbach, Johann Jakob, a German Biblical scholar; born in Butzbach, Hesse-Darmstadt, Jan. 4, 1745. The great work with which his name is associated is his critical revision of the New Testament text. He died in Jena, March 24, 1812.

Griesinger, Karl Theodor, a German novelist; born in Kirnbach, in the Black Forest, Dec. 11, 1809; studied theology at Tubingen and became a clergyman, then drifted into authorship. He visited the United States and wrote several pictures of New York life. He died in Stuttgart, March 2, 1884.

Griffin, or **Griffon,** in mythology, a fabulous animal, usually represented with the body and legs of a lion, and the head and wings of an eagle, signifying the union of strength and agility. Figures of griffons are frequently used as ornaments in works of art. It is employed as an emblem of vigilance, the animals being supposed to be the guardians of mines and hidden treasures.

Griffin, Appleton Prentiss Clark, an American author; born in Wilton, N. H.; received a public school education; was connected with the Boston Public Library in 1871–1894; became assistant librarian in the Congressional Library in 1897.

Griffin, Gerald, an Irish novelist, dramatist, and poet; born in Limerick, Ireland, Dec. 12, 1803. In 1823 he went to London and embarked on a literary career. He died in Cork, June 12, 1840.

Griffin, Gilderoy Wells, an American lawyer and author; born in Louisville, Ky., March 6, 1840; was educated at Louisville University, and admitted to the bar in 1861. He was consul to Copenhagen in 1871; to the Samoan Islands in 1876; to Auckland, New Zealand, in 1879; and to Sydney, Australia, in 1884. He died in Louisville, Ky., Oct. 21, 1891.

Griffin, Watson, a Canadian author; born in Hamilton, Ont., Nov. 4, 1860; was educated at Toronto University; later was connected with various Canadian and American journals.

Griffis, William Elliott, an American clergyman and author; born in Philadelphia, Pa., Sept. 17, 1843; was graduated at Rutgers College in 1869 and at the Union Theological Seminary in 1877; spent several years in Japan teaching and organizing schools; became pastor of the First Congregational Church of Ithaca, N. Y., in 1893.

Griffiths, John Willis, an American naval architect; born in New York city, Oct. 6, 1809; became a special naval constructor in the United States navy in 1858. His inventions include a timber-bending machine, iron keelsons for wooden vessels; bilge keels to prevent rolling; improved rivets; and triple screws for great speed. He died in Brooklyn, N. Y., April 29, 1882.

Grigorovich, Dimitrij Vasilievich, a Russian novelist and prose-writer; born in Simbirsk, March 31, 1822. His first stories, "The Village" and "Anton the Unfortunate," achieved wide popularity and rank him among the first of Russian novelists.

Grillparzer, Franz, an Austrian poet and dramatist; born in Vienna, Jan. 15, 1791. "Blanche of Castile," a tragedy, written at 17, and "Spartacus," a tragedy, showed genus; but "The Ancestress," first called popular attention to him. "Sappho," a tragedy based on classical tradition, made him eminent in scholarship also. He died in Vienna, Jan. 21, 1872.

Grimaldi, the name of an illustrious family of Genoa, distinguished as partisans of the Guelphs.

Grimm, Herman, a German essayist, critic, and biographer, son of Wilhelm Grimm, born in Cassel Jan. 6, 1828. His most famous work is his "Life of Michael Angelo."

Grimm, Jakob Ludwig, a German philologist and literary historian; born in Hanau, Hesse-Cassel, Jan. 4, 1785. The labors of Grimm are of unrivaled importance in the broad field of German literary antiquities. The constant aim of his investigations was to trace the spiritual life of the German people as revealed in their laws, customs, faiths, and poetry. His "Deutsche Grammatik" is perhaps the greatest philological work of the age and may be said to have laid the foundation of the historical investigation of language. This work, as well as the great "Deutsches Worterbuch," commenced in 1852 in conjunction with his brother Wilhelm, he did not live to complete. He died in Berlin, Sept. 20, 1863.

Grimm, Wilhelm, a German philologist, brother of the preceding; born in Hanau, Hesse-Cassel, Feb. 24, 1786. He edited many old German texts, and collaborated with his brother Jakob in several of his works. He died in Berlin Dec. 16, 1859.

Grimm's Law, a law formulated by Jakob Grimm, the German philologist, relative to the changes undergone by mute consonants in the most important of the Aryan languages.

Grindelwald, one of the most beautiful valleys (3,468 feet) of the Bernese Oberland in Switzerland, about 12½ miles long and 4 broad; it forms the approach to the two Grindelwald glaciers.

Gringore, or **Gringoire, Pierre,** a French dramatist and satiric poet; born between 1475 and 1480. He early became known as a writer of moral and allegorical poems, next of satirical farces abounding in allusions to the social and political circumstances of the time. He is an important figure in literary history as one of the creators of the French political comedy. In later life he entered the service of the Duke of Lorraine as a herald, and confined his muse to religious poetry alone. He died in 1544.

Grinnell, George Bird, an American editor and author; born in New York State, in 1849. He was the editor of "Forest and Stream." His works deal principally with Indian life and folklore. He died in New York city, Dec. 19, 1891.

Grinnell, Henry, an American merchant; born in New Bedford, Mass., Feb. 13, 1799. In 1850 he fitted out an expedition, under the command of Lieut. E. J. De Haven, to search for the Arctic explorer Sir John Franklin. De Haven discovered land which he named Grinnell Land. He could not find Franklin and returned. In 1853, in connection with George Peabody, Grinnell fitted out another expedition for the same purpose as the first. This was under Dr. Elisha K. Kane, but was no more successful than the former one, though adding much to scientific knowledge. He died in New York city, June 30, 1874.

Grinnell Land, a barren, mountainous Polar tract, in lat. 80° N., separated from Greenland by Smith Sound and Kennedy Channel. It was discovered by Lieut. E. J. De Haven, and named after Henry Grinnell, of New York.

Grip, or **La Grippe,** a disease which frequently becomes an epidemic in different parts of the United States and Europe and in the East and West Indies. It is believed to be contagious, and is somewhat similar to influenza. The symptoms are fever, headache, swelling and pain in the smaller joints, eruption of the skin, etc. The disease is produced by bacilli which, when magnified, appear somewhat like goose eggs in form and substance. They are usually discovered in pairs, and where the disease has attacked a person are abundant in the lung and bronchial tissues, and in the nasal and salivary secretions. They are imbibed in breathing, and will not breed except in a temperature of at least 80°, yet no degree of natural cold can kill them. When in a temperature below that mentioned they remain in a dormant state. In 1892, the grip germ was discovered in Berlin by Prof. Robert Pfeifer, who observed that it breeds by lengthening itself and then dividing in the middle. This operation requires about 20 minutes, and wonderful as it may seem, is continued until it produces 16,500,000 germs in 24 hours.

Gripes, a popular name for keen but more or less intermittent pains in the abdomen, produced by colic or any similar disease.

Griqualand, West and **East,** two British districts of South Africa, named from the Griquas or Bastaards, a mixed race sprung from Dutch settlers and native women. Portions of the country are suitable for sheep farming and agriculture, but the chief source of wealth is the diamond fields. The first diamond was discovered in 1867. Diamonds to the value of $75,000,000 were found there between 1883 and 1887, and the daily output of the consolidated mines at Kimberley was estimated in 1900 at $220,000.

Grisebach, Eduard, a German author; born in Gottingen, Oct. 9, 1845. He was a consular agent for many years. "German Literature Since 1770," and "The Goethe Period of German Poetry," are masterpieces. His editing of Schopenhauer has been very important.

Grisi, Giulia, an Italian singer; born in Milan, May 22, 1812. She made her debut at Bologna. Her fame reached its climax in her rendition of the roles of "Norma" and "Lucrezia Borgia," in which characters her singing and dramatic acting have never been surpassed. She was twice married; on the second occasion to the unrivaled tenor, Signor Mario, Marquis de Canada, with whom she visited the United States in 1854, singing in the principal cities. She died in Berlin, Nov. 29, 1869.

Gris-nez, Cape, a headland 164 feet high, in the department of Pas-de-Calais, France, opposite Dover, is the point of land nearest to the English shore, the distance being barely 20 miles. It is surmounted by a lighthouse.

Grison, or **Huron,** a South American weasel, somewhat larger than the European weasel, and often kept in captivity.

Grisons, or **Graubunden,** a canton of Switzerland; the largest and the most thinly peopled; bounded by Tyrol and Lombardy; area, 2,773 square miles; capital, Chur.

Griswold, Alexander Viets, an American clergyman; born in Simbury, Conn., April 22, 1766; ordained in the Protestant Episcopal Church in 1795; made bishop over "The Eastern Diocese," including all of the New England States except Connecticut in 1811. He died in Boston, Mass., Feb. 15, 1843.

Griswold, Hattie Tyng, an American author; born in Boston, Jan. 26, 1842. She wrote many tales and poems.

Griswold, Rufus Wilmot, an American editor; born in Benson, Vt., Feb. 15, 1815. The most important paper which he edited during his career, the "International Magazine," was afterward amalgamated with "Harper's Magazine." His books are numerous. He died in New York city, Aug. 27, 1857.

Grivet, a monkey with greenish-gray fur, some white hairs near the hinder extremities, the tail gray; found in Africa.

Grizzly Bear, a huge bear, sometimes 9 feet from the nose to the end of the very short tail, and weighing 800 pounds. The hair, which varies between gray and blackish brown, is more or less grizzled, whence the animal's English name. It inhabits North America, especially the Rocky Mountains. It feeds partly on fruits and roots, and partly on animal food.

Groat, a name given in the Middle Ages to all thick coins, as distinguished from the "bracteates" or thin coins of silver or gold-leaf stamped so as to be hollow on one side and raised on the other.

Groats, the seeds of oats prepared as an article of food by being deprived of their hulls. They are much used in the preparation of gruel for invalids.

Groin, in anatomy, the hollow in the human body where the thigh and the trunk unite. In architecture, the angle or angular curve formed by an intersection of vaults; most of the vaulted ceilings of the Middle Ages were groined, and therefore called groined ceilings.

Gros, Baron Antoine Jean, a French painter; born in Paris, March 16, 1771. His first great achievement, however, was "Napoleon Visiting the Plague-smitten at Jaffa" (1804). Gros also painted several other historical pictures illustrating the achievements of Napoleon. His body was found in the Seine near Meudon, June 27, 1835.

Grosbeak, or **Grossbeak,** the cardinal grosbeak, an American bird. The pine grosbeak is called also pine bullfinch; and the social or republican grosbeak is from South Africa, and belongs to the sub-family of weaver birds.

Groschen, a small silver coin used in the North German States, value about 2 1-3 cents. Each groschen is sub-divided into 10 pfennigs.

Grose, Francis, an English antiquary; born in Greenford, Middlesex, in 1731. His "Antiquities of England and Wales" (1773–1787) proved a success, and in 1789 he set out on an antiquarian tour through Scotland. Grose's work on the antiquities of Scotland appeared 1789–1791; that of Ireland in 1791. He died in Dublin, Ireland, May 12, 1791.

Gross, Samuel David, an American surgeon; born in Easton, Pa., July 8, 1805; was graduated at Jefferson Medical College, 1828. He was the founder and chief editor of the "North American Medico-Chirurgical Review," and president of the American Medical Association 1867. He died in Philadelphia, Pa., May 6, 1884.

Grosse, Julius, a German author; born in Erfurt, April 25, 1828. He was successively lawyer, playwright, and journalist.

Grosseteste, Robert, an English clergyman; born in Stradbroke, Suffolk, about 1175; educated at Lincoln, Oxford, and Paris; he had for some years been the first teacher of theology in the Franciscan school at Oxford, and had held eight archdeaconries and other preferments, when in 1235 he was elected Bishop of Lincoln. He forthwith undertook in the most vigorous fashion the reformation of abuses, embroiling himself thereby first with his own chapter and next with Pope Innocent IV., whom he twice visited at Lyons, in 1244–1246 and 1249–1250. He was excommunicated by Innocent, but the feeling of the English nation sustained him, his clergy went on obeying him as if nothing had happened. He died in Buckden, Oct. 9, 1253.

Grosswardein, or **Nagyvard,** a town of Bihar Co., Hungary. At Grosswardein peace was concluded between Ferdinand I. of Austria and John Zapolya of Transylvania in 1538. It was taken and pillaged by the Turks in 1660, and remained in their hands till its recapture by the Austrians in 1862. Pop. (1900) 50,177.

Grosvenor, Edwin Augustus, an American educator; born in Newburyport, Mass., Aug. 30, 1845; was graduated at Amherst College in 1867 and at Andover Theological Seminary in 1872; Professor of History at Robert College, Constantinople, in 1873-1890; accepted the chair of European History at Amherst College in 1892.

Grosz, Ferdinand, an Austrian journalist; born in Vienna, April 8, 1849. He wrote while still a boy; but his first success was "Literary Music of the Future" (1877). Since then he has traveled extensively and written for the best papers.

Grote, George, an English historian; born in Clayhill, Kent, Nov. 17, 1794; died in 1871. In 1832 he was elected a member of Parliament for the city of London, and his subsequent parliamentary career, until his retirement in 1841, was principally devoted to the advocacy of vote by ballot. In 1846 appeared the first two volumes of his "History of Greece." The remaining 10 volumes followed in rapid succession, the final volume being published in 1856. The work terminates with the death of Alexander the Great. He died in London, June 18, 1871.

Grotefend, Georg Friedrich, a German archæologist; born in Munden, Hanover, June 9, 1775. He made for himself an enduring fame by deciphering the cuneiform alphabet first given forth in 1802. He died in Hanover, Dec. 15, 1853.

Grotefend, Karl Ludwig, a German historian; born in Frankfort-on-the-Main, Dec. 22, 1809; studied at Gottingen University, and filled from 1853 a post in the Royal Archives at Hanover. His works are of the greatest value for numismatics and Roman epigraphy. He died Oct. 27, 1874.

Grotesque, a term used in painting by the Italians; appropriated to that peculiar manner of composition and invention observed among the antique monumental paintings which were discovered in the subterranean chambers that had been decorated in the times of the ancient Romans.

Grotius, or **De Groot, Hugo,** a Dutch statesman; born in Delft, Holland, April 10, 1583. In 1613 he supported Barneveldt and the cause of the Arminians by his pen and influence. But for this he received sentence of imprisonment for life in the fortress of Lœwestein. From this, however, at the expiration of 18 months, which he had employed in writing his celebrated "Treatise on the Truth of the Christian Religion," he succeeded in escaping. This was effected by the management of his wife, who contrived to have him carried out of the castle in a chest that had been used for the conveyance of books and linen. Grotius at first sought an asylum in France; and it was during his residence there that he composed his great work, "The Justice of War and Peace." On his return to his native country he was condemned to perpetual banishment. He passed the remnant of his life in the diplomatic service of Sweden, dying Aug. 28, 1645.

Groton, a town in New London co., Conn., on the Thames river and Long Island Sound, opposite New London. There still may be seen Fort Griswold, memorable for the massacre of an American garrison by the British in 1781. A granite monument, to commemorate that event, was erected in 1830. Pop. (1900) 5,962.

Grouchy, Marquis Emmanuel de, a French military officer; born in Paris, Oct. 23, 1766; entered the army at 14; threw in his lot with the Revolution. He fought with conspicuous gallantry in the Russian campaign of 1812, being appointed during the memorable retreat leader of the bodyguard of Napoleon. Among the first to welcome Napoleon after his escape from Elba, Grouchy destroyed the Bourbon opposition in the S. of France, and then, hastening N., routed Blucher at Ligny. After the defeat at Waterloo and the second abdication of Napoleon, Grouchy, appointed by the provisional government commander-in-chief of the broken armies of France, led them skillfully back toward the capital; then, resigning, he went to the United States. He returned from exile in 1819, and was reinstated as marshal in 1831. He died in St. Etienne, May 29, 1847.

Ground Dove, a name of various species of pigeons, living mainly on the ground, their feet being better suited for walking than perching. The name is especially given to the members of the genus Chamæpelia, small birds belonging to the warmer parts of America, and includes the bronzewing pigeons of Australia. The crowned pigeons are also so called.

Ground-Hog Day, the 2nd of February, on which day, it is said, the ground-hog comes out of his hole, and if he sees his shadow goes back again and remains six weeks, which indicates a late spring. If he fails to see his shadow he does not return to his hole, and the spring will be early.

RUFFED GROUSE.

Grouse, in ornithology, various game-birds, specially the black grouse, and the red grouse. The male of the former is called the black cock, and the female the gray hen. The red, called also the common grouse, inhabits moors, feeding on the young shoots of the heath. They are well known to be large, plump, somewhat heavy birds, usually short-tailed, and with beautifully variegated plumage, which must often be protective. They are especially abundant in the N. parts of both New and Old World. They frequent woods, roost in trees, nest on the ground, and fly straignt and swiftly. The male is famous for his habit of drumming, or beating stiffly downward with his wings and making a loud drumming noise. The largest American grouse is the cock of the plains or sage cock. It is dispersed over the W. plains, and, according to Elliot, owes the bitter unpalatable character of its flesh to its diet of artemisia or wild sage which abounds in these regions. The tail is remarkably long, the neck sacs very large, the usually hard gizzard portion of the stomach remains soft.

Grove, in comparative religion, a group of trees under which religious worship is held.

Grove, Sir George, an English author; born in Clapham, England, in 1820; was trained as a civil engineer. As a member of the staff of Robert Stephenson he was employed at the Chester general station and the Britannia tubular bridge. He was editor of "Macmillan's Magazine," a large contributor to Smith's "Dictionary of the Bible," and editor and part author of the great "Dictionary of Music and Musicians." He was knighted in 1883 on the opening of the Royal College of Music, Kensington Gore, of which he was made Director by the Prince of Wales. He died in London, England, May 28, 1900.

Grove, Sir William Robert, an English physicist; born in Swansea, Wales, July 11, 1811; became interested in the study of experimental physics and electricity early in life. He won fame by the invention of the Grove voltaic battery in 1839. He died in London, Aug. 2, 1896.

Grove Battery, a double fluid galvanic battery, invented in 1839 by Sir William Grove. It consists of a plate of amalgamated zinc, generally bent into a shape like the letter U, so as to embrace a flat cell of porous earthenware in which is suspended a sheet of platinum foil. The porous cell is filled with strong nitric acid, and the whole arrangement placed in a jar containing dilute acid 1 in 20.

Grove City College, a non-sectarian coeducational institution in Grove City, Pa., founded in 1876.

Grover, Cuvier, an American army officer; born in Bethel, Me., July 24, 1829. On the outbreak of the Civil War he was a captain in the 10th infantry, and with his command in New Mexico. Returning East, he was, April, 1862, appointed a Brigadier-General of volunteers, and assigned to duty with the Army of the Potomac, participating in the various battles of the Peninsular campaign in Virginia, and in the second battle of Bull Run. In August, 1864, he was assigned to the command of the 19th Corps, and in the Shenandoah campaign was engaged in the battles of Opequan, Fisher's Hill, and Cedar Creek; subsequently commanded the district of Savannah, Ga., and was mustered out of the volunteer service August, 1865; in 1875 became colonel of the 1st Cavalry. He died in Atlantic City, N. J., June 6, 1885.

Grow, Galusha Aaron, an American legislator; born in Eastford, Conn., Aug. 31, 1824; was graduated at Amherst College in 1844, and admitted to the bar in 1847; settled in Towanda, Pa., and there practised; was a member of Congress in 1851–1863 and speaker during the last two years. He was again elected to Congress in 1894, and continued to serve until March 4, 1903.

Grub, a name generally applied to the worm-like larvæ of insects when they have a distinct head but no legs, e. g., in bees and some beetles.

Grubb, Howard, an optician and telescope-maker of considerable celebrity at Dublin, Ireland. He was the first to suggest a movable floor for an observatory dome, which has been adopted in the dome of the great 36-inch telescope of the Lick Observatory.

Grun, Anastasius, pseudonym of Anton Alexander, Count of Auersperg; an Austrian poet; born in Laibach, April 11, 1806. Though of aristocratic birth and breeding, his political leanings were liberal, and he became immersed in the progressive movement of his day. His literary work, for the most part, grew out of and developed his public policy. He died in Gratz, Sept. 12, 1876.

Grundtvig, Nikolai Frederik Severin, a Danish poet; born in Udby, Zealand, Sept. 8, 1783. His religious views got firm hold of the hearts of the people throughout the three countries of Scandinavia. Besides this he was instrumental in raising the educational condition of the peasantry. From 1839 Grundtvig preached in the church of Vartov Hospital in Copenhagen, after 1861 with the title of bishop, though he held no see. He died in Copenhagen, Sept. 2, 1872.

Grundy, Sydney, an English author; born in Manchester, March 23, 1848; was called to the bar. He has become known as a successful playwright.

Grysboc, or **Grysbok,** a South African antelope. It has straight, upright, pointed, shining horns, with two or three small annuli at the roots. On the upper parts the hair is red mixed with white, below it is sandy-brown or red, and on some there is black about the head. Length of the animal, nearly three feet. It is found in South Africa, goes in pairs, not in herds, and furnishes excellent venison.

Guadalajara, city and capital of the State of Jalisco, Mexico, and the third city of the republic. Guadalajara is the seat of an archbishop, and possesses a handsome cathedral, besides the government palace, a mint, university, hospitals, and school of art. Its industries are important; it is the chief seat of the cotton and woolen manufactures of the country, and the Guadalajara pottery and metal wares, like the confectionery, have a reputation all over Mexico. Pop. 83,934.

Guadalaquivir, a river, known to the ancients by the name "Baetis," rises in the Sierra de Cazorla, Spain, on the borders of Jaen and Murcia, and falls into the Atlantic at San Lucar, after a winding course of about 250 miles.

Guadalupe, a river rising among the mountains in Kerr co., Tex.; flows a general E. and S. E. course and enters Espiritu Santo Bay.

Guadalupe-Hidalgo, a village of the federal district in Mexico, at the foot of Guadalupe mountain; 5 miles

N. of Mexico city. It has a famous brick cathedral, the richest in all Mexico. Here is preserved a miraculous picture of a brown Virgin, painted on a peasant's coarse cloak. The treaty which ended the war with the United States was signed here, Feb. 2, 1848.

Guadeloupe, one of the Lesser Antilles; a French colony. It is divided into two distinct parts by a narrow arm of the sea called Riviere Salee. The principal exports are sugar, coffee, dye, and cabinet woods, tafia, hides, copper, etc. The principal town, St. Louis, or Point-a-Pitre, was destroyed by an earthquake in February, 1843. Guadeloupe was discovered by Columbus in 1493, and named by him Santa Maria de la Guadeloupe. In 1635 it was taken by the French, who held it till 1759, when the English gained possession of it, after which it changed owners several times, till the peace of 1814 restored it to the French. Pop. 167,000.

Guaiacum, an ornamental tree with blue flowers, growing in Jamaica. The wood furnishes Lignum vitæ; its resin is called gum guaiacum. The leaves are used in the West Indies as a substitute for soap. The bark and wood are used as sudorifics, diaphoretics, or alteratives.

Guaira, La, the port of Caracas, Venezuela, on a narrow strip of land between the mountains and the Caribbean Sea. Efforts have been made to improve the harbor by the construction of a breakwater and wharves. The average value of the imports is almost $5,000,000, and that of the exports nearly as much. The place figured prominently in the recent blockade of Venezuelan ports by the British, Germans and Italians. It was not bombarded, however.

Guam, an island in the Pacific Ocean, the largest of the Marianne or Ladrone group; area, 200 square miles; capital, Agana. The island is fertile and to a great extent covered with valuable timber lands. There are 18 schools and about 90 per cent. of the natives can read and write. At the beginning of the Spanish-American War the Ladrone group belonged to Spain, and on June 20, 1898, the United States cruiser "Charleston," on its way to Manila, opened fire on Agana. The Spanish garrison, not knowing that war existed, and thinking the attack was a salute, sent an officer to the "Charleston" apologizing for not returning it, owing to lack of ammunition. When they learned the state of affairs, the place was surrendered in less than 30 minutes. Captain Leary, of the United States navy, was appointed the first American governor, and under his direction important reforms were instituted. Slavery was abolished, and a breakwater and fortifications are under construction at the harbor of San Luis d'Apra, preparatory to establishing a coaling station there. Pop. about 9,000.

Guan, a sub-family of birds among the representatives in the New World of the grouse and pheasants in the Old. It is represented by 14 species distributed from Southern Texas through Mexico to Paraguay. The guans are graceful birds, with long tails, handsome, variegated plumage, bare, dilatable patches of skin on the throat, and naked spaces round the eyes. They live mostly on trees, descending to the ground in search of their food, which consists of fruits, berries, and insects. They are remarkable for their loud, frequent cries, from which the Spaniards call them squalling pheasants.

Guano, a grayish white, yellowish, dark brown, or reddish substance, classed by Dana as a mineral, which he places among his anhydrous phosphates and sulphates. It is a bone phosphate of lime or osteolite with some impurities. Found in islands off the Peruvian and other South American coasts, also in those off the coast of Africa and elsewhere. Guano is formed by the droppings of multitudinous birds in secluded places where they have been undisturbed for ages. If, in any locality, little rain falls, this tends to the rapid accumulation of guano.

Guantanamo Bay, a harbor of Southern Cuba, 38 miles E. of Santiago. It was just outside of this bay that United States war vessels, during the early part of the war with Spain, tried to cut the cables which extended from Santiago to Guantanamo and thence to Spain. On May 18, 1898, the "St. Louis" and the tug "Wampatuck" endeavored to get into the mouth of the harbor, but the Spanish batteries and a gunboat in the bay opened up such a severe fire that the "Wampatuck" was forced to withdraw, after grappling a cable about 800 yards from the shore. On June 10, the United States cruiser "Marblehead" shelled the hills on the right of the bay where the enemy had erected earthworks, and the next day the transport "Panther" landed 600 marines at Caimanera. In July, 1901, Guantanamo Bay was selected by the United States government as the site of one of four projected naval stations on the Cuban coast.

Guapore, a river of South America, rises in Brazil, and for some distance forms the boundary between Bolivia and Brazil. It unites with the Mamore to form the Madeira.

Guard, a term applied to a military troop especially attached to the person of a sovereign, or chief ruler of a state. Bodyguards have been an inseparable accompaniment of monarchy from the earliest ages.

Guardafui, Cape, the extreme E. point of the African continent, and the extremity of an immense promontory.

Guard Boat, a boat employed to row round and about ships of war in a harbor to see that a proper lookout is kept.

Guard Ship, a vessel of war stationed in a port or harbor to act as a guard, to see that the harbor regulations are observed, and to receive seamen until they can be draughted off to their respective ships. In the latter sense it is known in the United States as a receiving ship.

Guardian Angel, a common belief but not an article of faith in the Latin and Greek Churches that to every individual of the human race there is assigned at birth an angel as guardian and protector. The belief is shared by Anglican High Churchmen. The Roman Church celebrates the Feast of Guardian Angels on October 2.

Guarea, a genus of tropical American trees, of some of which the bark is used as an emetic and purgative. G. grandifolia is called musk wood in some of the islands of the West Indies, the bark smelling so strongly of musk that it may be used as a perfume.

Guarneri, or **Guarnieri,** the name of one of the three celebrated families of violin-makers who flourished at Cremona in the 17th and 18th centuries.

Guatemala, a republic of Central America, bounded by Mexico, Belize, Honduras, San Salvador, Gulf of Honduras, and the Pacific Ocean; area, 63,400 square miles; pop. (1900) 1,574,340; number of departments, 22; and capital, Guatemala la Neuva.

The country is exceedingly mountainous and elevated. Along the main chain are a number of volcanoes, among which are Fuego, over 12,000 feet high, and Tajumulco, 14,403 feet high. In October and November, 1902, an extensive region in Guatemala was devastated and many lives destroyed by volcanic eruptions.

On the tableland, of which a considerable portion of the state is formed, the climate is mild; but in more elevated situations the cold is intense. There is much valuable timber. The soil generally is of great fertility, producing, according to altitude, soil, etc., maize, wheat, rice, coffee, cotton, tobacco, sugar, cochineal, cacao, indigo, vegetables, and tropical fruits in great variety. The mineral resources are not much developed, but there are found gold, silver, lead, coal, talc, marble, pumice, and sulphur.

The foreign trade is carried on mostly with the United States, Germany, Great Britain, and France.

The executive power is vested in a president elected for a term of sixteen years, and ineligible for reëlection for the following term. The administration is carried on, under the president, by the heads of six departments, Foreign Affairs, Government and Justice, Hacienda and Public Credit, Public Instruction, Fomento, and War. The legislative authority is vested in a National Assembly consisting of one representative for every 20,000 inhabitants, chosen by universal suffrage for four years. The State recognizes no religious creed, all creeds having complete liberty of worship, the Roman Catholics predominating. Education is free and compulsory.

Ancient Guatemala was occupied by a race of Indians who had reached a high state of civilization at the time of the early Spanish invaders. It was conquered by Alvarado, a lieutenant of Cortez, and until 1824 was under Spanish rule, although independence was declared in 1821. Guatemala was a member of the Central American Confederation from 1824 to 1839, and several times since has attempted to bring all the Central American republics into a union, but without success, until 1897, when she signed a treaty of union with Costa Rica and the Greater Republic of Central America, which was, however, soon after dissolved.

Guayaquil, a city and capital of Guayas province, Ecuador; in the valley of the Guayas, 30 miles above its mouth. Most of the houses are built of bamboo or wood and earth, and covered with creepers. The custom house is the most noteworthy of the public buildings, which include a cathedral and a town hall. The city has gas lights, street railways, and an improved waterworks system. It was founded by Orellana in 1537, and removed to its present site in 1693. Pop. (1902) about 51,000.

Gubernatis, Angelo de, an Italian author; born in Turin, April 7, 1840. His profound scholarship and versatility have won him distinction in widely separated departments of literature.

Gudgeon, a small fresh-water fish. It is about 6 to 8 inches long, and half-cylindrical in shape; its back is pale-brown, spotted with black, the belly white, and the tail forked. The gudgeon swims in shoals, and feeds on worms and aquatic insects. They afford great sport to anglers, from their greediness in seizing upon any bait presented to them.

Gudin, Theodore, a French painter; born in Paris, Aug. 15, 1802; died in Boulogne-sur-Seine, France, April 11, 1880.

Gudrun, or **Kudrun,** an old German epic, built up out of the popular songs and traditions of the seafaring folk who dwelt on the shores of the North Sea between Elbe and Seine.

Gueber, or **Gheber,** a term applied by the Mohammedan conquerors of Persia to the disciples of Zoroaster in that country. They call themselves "Behendies," followers of the true faith, and are generally known by Europeans as fire-worshipers. Zoroaster is believed to have flourished in the 6th century B. C. In the course of time the system became very corrupt, and King Ardeshir Bakekan (A. D. 226) reformed it, collected the sacred books, and caused them to be translated from the Zend language into the vernacular dialect of Persia, and built temples for the preservation of the sacred fire. The Guebers have the character of being industrious and virtuous in comparison with the other Persians, but they are ignorant and depressed. At present they are numerous in Western India, where they are called Parsees, from the country of their origin.

They recognize one God, Ormuzd, invisible and omnipotent, the creator, governor, and preserver of all things. Ormuzd created a number of good spirits to act as the medium of his bounty to men, and intrusted them each with the guardianship of a particular person or object, animate or inanimate. The sun is the eye of Ormuzd, and, like all the heavenly bodies, is animated with a soul. The worship of idols is prohibited, but a reverence for fire and the sun inculcated, as emblems of deity. To Ormuzd is opposed Ahriman, the author of evil. The precepts of this religion are contained in the "Zend Avesta," or collection of sacred writings which Zoroaster received from heaven. The original was lost at the time of the invasion, but copies of it were preserved.

Guelf, or **Guelph,** the name of a family, which in the 11th century was transplanted from Italy to Germany, where it became the ruling race of several countries. The family still continues in the two lines of Brunswick, the royal in England, and the ducal in Germany.

Guell y Rente, Jose, a Spanish author; born in Havana, Cuba, Sept. 14, 1818; studied law in Havana and Barcelona. A romantic attachment for Dona Josepha de Bourbon, sister of the king, ended in his marriage to her, in spite of tremendous court opposition in 1848. He sided with the popular party in the revolution of 1854, and was subsequently elected to the Cortes. He died in Madrid, Dec. 20, 1884.

Guell y Rente, Juan, a Cuban poet; born in Havana, in 1815. He died in Madrid, Spain, 1875.

Guelphic Order, an order of knighthood of Hanover, instituted by George IV., when Prince Regent, in 1815. It is both a military and civil order, and is unlimited in number.

Guericke, Otto von, a German physicist; born in Magdeburg, Prussian Saxony, Nov. 20, 1602. As a natural philosopher he is chiefly known by his experiments regarding the nature and effects of air, his discovery of the air-pump in 1650, and of the Magdeburg hemispheres. He died in Hamburg, May 11, 1686.

Guerilla, an irregular mode of carrying on war by means of small, independent bands of armed men, self-constituted and ordered, unconnected with a regular army, and entitled to dismiss themselves at any time. Guerilla warfare is mainly carried on in a country occupied by an enemy. In the American Civil War much injury was done to the Union cause and its supporters by Confederate guerillas. The Cuban wars of independence have been carried on by fighters largely of the guerilla type.

Guerin, Baron Pierre Narcisse, a French painter; born in Paris, May 13, 1774. Among his pupils were Gericault, Delacroix, and Ary Scheffer. He died in Rome, July 6, 1833.

Guernsey, the second largest and most W. of the Channel Islands, lying off the N. coast of France. It is of a triangular form, about 9 miles long, and 3 to 4 miles broad. The dialect of the island is the pure Norman of some centuries ago; but a knowledge of English is general. The island is under a lieutenant-governor, who represents the sovereign in the assembly of the States, a kind of local parliament. It is strongly fortified, and has a well-organized militia. Pop. (1900) (including Herm and Jethou) 43,045.

Guernsey, Alfred Hudson, an American editor; born in Vermont, 1825. He was for several years editor of "Harper's Magazine." Together with Henry M. Alden he was author of "Harper's Pictorial History of the Great Rebellion," writing the Eastern campaigns, and "The Spanish Armada." He died Jan. 17, 1902.

Guerrero, Vicente, a Mexican military officer; born in Tixtla, Mex., Aug. 10, 1783. At the commencement of the revolution in Mexico he took up arms against the Royalists, and never ceased to occupy a prominent position in the affairs of that country. Having been successful in various contests with the aristocratic party, he at length, in 1829, was elected to the presidency. The expedition of Barradas soon gave employment to the new government; and the better to enable the president to meet the exigency, he was invested with extraordinary powers; but after the victory over the Spanish troops, and when the invading expedition was destroyed, Guerrero evinced an unwillingness to relinquish the dictatorship, which became the pretext of another revolution; and Bustamente, the vice-president, assumed the government. Guerrero, however, was not long idle; in September, 1830, he collected a large force at Valladolid, and established a form of government in opposition to that of Bustamente, and the whole country was agitated by troops in arms. He was captured and shot at Chilapa, Feb. 14, 1831.

Guesclin, Bertrand du, Constable of France; born near Dinan in the district of Rennes, about either 1314 or 1320. From his boyhood upward he excelled in all martial exercises. He was one of the greatest soldiers of the Middle Ages. He did eminent service in driving the English out of France, except the possession of a few fortified places. While assisting in the siege of Chateauneuf de Randon, in Languedoc, Du Guesclin was taken ill, and died July 13, 1380.

Guest, Edwin, an English archæologist; born in Worcestershire, England, in 1800. He died Nov. 26, 1880.

Gueux, or "The Beggars," the name assumed by the confederated nobles who opposed the introduction of the Inquisition into the Low Countries by Philip II. of Spain. The "beggars," who represented the national feeling of the country, maintained a long and vigorous contest against the despotic proceedings of Philip and his advisers, but were ultimately compelled to succumb to superior force.

Guiana, British, a British colony in the N. E. part of South America; bounded by Dutch Guiana, Brazil, Venezuela, and the Atlantic Ocean; area, 109,000 square miles; capital, Georgetown. The surface of the country is diversified with low savannahs near the coast and mountainous toward the S. The chief products are gold, sugar, molasses, balata, rum, and rice. There are railroads, steamship communications with Great Britain and telegraph and telephone systems. Columbus is said to have discovered the Guianas in 1498. In 1895 there was trouble between Great Britain and Venezuela concerning the Guiana boundary. The United States intervened, and a Commission of Arbitration gave a decision practically favorable to Venezuela. Pop. 286,222.

Guiana, Dutch, or **Surinam,** a colony of the Netherlands in the N. E. part of South America; bounded by Brazil, British Guiana, French Guiana, and the Atlantic Ocean; area, 60,060 square miles; capital, Paramaribo. The surface is low along the coast, gradually increasing in elevation toward the mountains in the S. The principal products and exports are sugar, cocoa, bananas, coffee, rice, maize, rum, molasses, and gold. There are public schools, savings banks, and steamship lines.

Guido Aretinus, or **Guy of Arezzo,** a French musician; born near Paris in 990; went to Arezzo as a Benedictine monk. It was he who first adopted as names for the notes of the scale the initial syllables, set to regularly ascending tones, of the hemistichs of a hymn in honor of St. John the Baptist. He died in Avellana in 1050.

Guido Reni, an Italian painter; born in Calvenzano, Nov. 4, 1575. About 1596 he settled in Rome, where he worked for some 20 years, adopting a graceful style, of which the famous "Aurora and the Hours," painted on the ceiling of the pavilion of the Rospigliosi Palace, is a typical example. On account of a quarrel with Cardinal Spinola regarding an altarpiece commissioned for St. Peter's he left Rome and settled at Bologna, where he died Aug. 18, 1642.

Guidon, a swallow-tailed company flag in a cavalry regiment, half red and half white, dividing at the fork.

Guido y Spano, Carlos, an Argentine poet; born in Salta, March 8, 1832. He was elected deputy to the National Congress, and became its president. He gained reputation as a poet, and is held in highest esteem by his countrymen.

Guild, a society or body of individuals associated together for carrying on commerce, or some particular trade or business. There existed at Rome various fraternities of tradesmen, which bore a considerable resemblance to our modern guild, and were permitted to regulate their affairs by their own laws; but it is usual to trace the origin of guilds to the Middle Ages. As soon as the citizens acquired an influence in the administration, the guilds became the basis of the municipal constitutions, and every one who wished to participate in the municipal government was obliged to become a member of a guild. Hence we so often find distinguished individuals belonging to a class of mechanics of whose occupation they probably did not know anything. Guilds introduced the democratic element into society, and in their progress became the bulwarks of the citizen's liberty and the depositaries of much political power. By the close of the 12th century merchants' guilds were general throughout the cities of Europe. The Drapers' Company of Hamburg dates from 1153, and that of the Shoemakers of Magdeburg from 1157. With the increase of their wealth and strength, the guilds either purchased or extorted from their rulers privileges which, once obtained, they were careful never to give up. By the 13th century they had acquired considerable power, and in two successive ages they counterbalanced the power of the nobles.

Guild, Curtis, an American author; born in Massachusetts in 1828. He was the editor of the Boston "Commercial Bulletin," which he founded in 1859, and was the author of several popular books of travel.

Guild, Reuben Aldridge, an American author; born in West Dedham, Mass., May 4, 1822.

Guildhall, a building in London, the place of assembly of several courts, and the scene of the civic banquets of the city corporation; originally built in 1411, but almost wholly destroyed by the great fire of 1666. It was rebuilt in 1789 in its modern form.

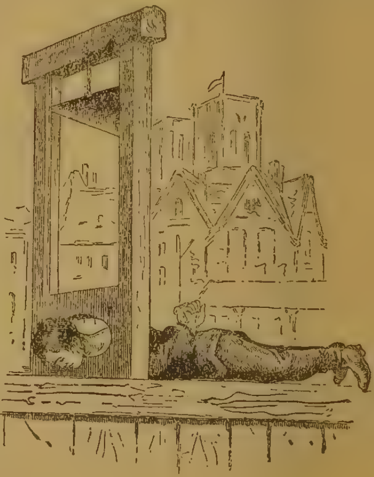
Guilford College, a coeducational institution in Guilford, N. C.; founded in 1837 under the auspices of the Society of Friends.

Guilford Court-House, a village in Guilford co., N. C.; about 5 miles from Greensboro; noted for a battle fought between the Americans under General Greene, and the British under Lord Cornwallis, on March 15, 1781. The Americans numbered about 4,400 and the British 2,400. Both armies lost heavily, and the engagement was indecisive.

Guillemot, a genus of natatorial birds. The bill is moderate and slender, the frontal planes advancing far upon the nostrils, but divided by the culmen; the tail short, the wings pointed, the feet short, slender, and three-toed. The proper habitat of the guillemot is amid the rocks and ice-caverns of the Arctic Ocean. In America the guillemot breeds as far S. as the Bay of Fundy, and is occasionally found on the coasts of New York.

Guillotine, an apparatus for beheading persons at one stroke, adopted by the National Assembly of France during the first Revolution, on the proposal of a Dr. Guillotin, after whom it was named.

In this apparatus decapitation is effected by means of a steel blade loaded with a mass of lead, and sliding between two upright posts, grooved on their inner sides, the person's neck being confined in a circular opening between two planks, the upper one of which also slides up or down. The condemned is strapped to a board, which rests horizontally on the table in front of the upright posts, the neck of the condemned within the semicircle of the lower plank, the other being raised for the purpose. The knife is fixed to the cap or lintel on the top of the posts by a claw in the form of an 8, the lower part of which opens as the upper part closes. This claw is acted upon by a lever to which a cord is attached. When the head of the condemned is in position the cord is pulled, and by the action of the lever the knife is set at liberty, descending by the grooves in the upright posts and falling on the neck of the condemned just behind the planks which keep the head in position. The same name is given to a machine which cuts by a knife descending between grooved posts, much used for cutting paper, straw, etc.


GUILLOTINE.

Guilmant, Felix Alexandre, a French musician; born in Boulogne, March 12, 1837. He is one of the foremost of French organists, and his organ works, among which are five sonatas, are of great interest and beauty.

Guinea, the name of a large section of the W. coast of Africa. Guinea is made up of several States or colonies, some of which belong to England, France, Spain, and Portugal, while others are independent. The coast-line is throughout tolerably uniform, and everywhere flat, with numerous shallow lagoons separated from the ocean by narrow spits of sand, lying parallel to the coast. Proceeding inland, the country rises to the central plateau of the continent by a series of broad terrace-like steps, down which the longer rivers are generally precipitated in cataracts and rapids. The Genoese claim to have been the first European navigators to reach, in 1291, the coast of Guinea, but it was not colonized till the end of the 15th century, when the Portuguese, under the enterprising Prince Henry the Navigator, sent out, in 1481, the first colonies to this part of the world.

Guinea, a gold coin, formerly current in Great Britain. At present there is no English coin so called, but the fashion still prevails of quoting prices of some things in guineas, and subscriptions are frequently recorded in the same denomination.

Guinea, Gulf of, that portion of the Atlantic which washes the shores of Upper Guinea, between Cape Palmas and Cape Lopez.

Guinea Fowl, a genus of African birds in the pheasant family. It is common in Guinea and S. to the Cape of Good Hope. It is found also in more N. parts of Africa. In their wild state the birds occur in flocks, sometimes of 50 to 60, and are extremely shy and difficult to approach. They utter a frequent, harsh, and querulous cry. The guinea fowl is now common in the poultry yards of most parts of the world, though it is more adapted to warm than to cold climates.

Guinea Pig. The common guinea pig is indigenous to South America, but is now found domesticated in all parts of the world. It has ears large and broad, the upper lip divided in two, the hair or fur erect, and somewhat resembling that of a pig. Its color is generally white, with black spots, although this is somewhat variegated by orange blotches on the coat. It has five toes on the fore legs and three on the hind ones and has no tail.

Guines, formerly **Guisnes,** a small town in France, 8 miles S. of Calais; the scene of "the Field of the Cloth of Gold."

Guiney, Louise Imogen, an American poet; born in Boston, Jan. 7, 1861.

Guisborough, a town of the North Riding of Yorkshire, England, at the foot of the Cleveland Hills. Here are the remains of a priory built in 1119 by Robert de Brus, and at the time of the Reformation one of the wealthiest monastic institutions in the kingdom.

Guise, a town of the department of Aisne, France, on the Oise, 25 miles E. N. E. of St. Quentin. Within the town are the ruins of a castle, from which the famous Dukes of Guise derived their title. The iron works are conducted on a profit-sharing scheme; and the workmen are provided with dwellings on the associated plan. This "Familistere," of which the first portion was erected by the initiator of the experiment, M. Godin, in 1859–1860, cost about $400,000, and provides accommodation for 2,000 persons. Within the buildings are a cafe, theater, nursery, schools, covered playgrounds, coöperative store, and a library and reading room.

Guise, the name of a branch of the ducal family of Lorraine, which it derives from the town of Guise, in the department of Aisne.

Claude of Lorraine, first Duke of Guise, fifth son of Rene II., Duke of Lorraine; born at the chateau of Conde, Oct. 20, 1496; died April 12, 1550.

His daughter, Mary of Lorraine, born Nov. 22, 1515; in 1538 became the wife of James V. of Scotland. By his death in 1542 she was left a widow with one child, Mary, Queen of Scots. Under the regency of Arran which followed, war broke out between England and Scotland, partly on account of the claims which Henry VIII. made with regard to the infant Mary's marriage, and partly on religious grounds. Mary of Lorraine during those years acted with much wisdom and moderation; but after her own accession to the regency in 1554, she allowed the Guises too much to influence her policy, the result being that the Protestant nobles combined against her in 1559. This rebellion, which she was assisted by French troops to repress, continued almost to the time of her death, which took place in Edinburgh Castle, June 10, 1560.

Francis, second Duke of Guise, son of the first duke; born in Bar, Feb. 17, 1519; became one of the greatest generals of France. He and his brother Charles, the cardinal, managed to possess themselves of all real power during the reign of the weak King

Francis II. Putting themselves at the head of the Roman Catholic opposition to the Reformation, they repressed Protestantism with a strong arm. In the war between Huguenots and Catholics Guise and Montmorency won a victory at Dreux in 1562, and the former was besieging Orleans when he was assassinated by a Huguenot nobleman, on Feb. 18, 1563.

Henry I., third Duke of Guise, son of Francis; born Dec. 31, 1550. Filled by the murder of his father with bitter hatred of the Protestants, he fought fiercely against them. He was one of the contrivers of the massacre of St. Bartholomew, Aug. 24, 1572, in which he personally made sure that Coligny should be slain; and subsequently he put himself at the head of the Catholic League. He had, however, a greater ambition, that of succeeding to the throne of France, for in respect of real power he was already the equal, or rather the superior of the feeble King Henry III., whose commands he set at naught and whom he so deeply humiliated that the king procured his assassination at Blois, Dec. 23, 1588.

Guitar, a musical stringed instrument, somewhat like the lute, particularly well adapted for accompanying the human voice, and much esteemed in Spain and Italy. It has six strings, and the sound is produced by the fingers of the right hand twitching the strings, while the fingers of the left hand make the notes of the music on the finger-board, which has frets across it.

Guiteau, Charles Julius, an American assassin; born about 1840; became a lawyer in Chicago. In 1880, after the election of James A. Garfield to the presidency, Guiteau went to Washington presumably to secure the office of United States consul at Marseilles, but did not succeed. On July 2, 1881, he shot the President in the waiting room of the Baltimore and Potomac Railroad station in Washington; and on Sept. 19 the President died from the effect of his wound. Letters taken from Guiteau after his arrest showed that he had planned to "remove" the President. He was indicted for murder on Oct. 7, was found guilty, after a sensational trial, on Jan. 25, 1882; and was hanged in the District of Columbia jail, June 30, following.

Guizot, Francois-Pierre-Guillaume, a French historian; born in Nimes, Oct. 4, 1787; educated at the gymnasium of Geneva, Switzerland. On the fall of the empire he obtained several public offices, such as councillor of state, and director-general of the department and communal administration. He was Minister of the Interior, Ambassador to Great Britain, and Minister of Foreign Affairs. After the fall of Louis Philippe, Guizot escaped and fled to England. Henceforth he practically retired from public life. Among his numerous works may be mentioned: "History of Civilization in France"; "General History of Civilization in Europe"; and "History of the English Revolution." He died in Val-Richer, France, Oct. 12, 1874.

Gujarat, or **Guzerat,** the chief town of Gujarat district, in the Punjab, India; is a place of some military and political importance, as well as the center of a considerable trade. Here, in 1849, a decisive battle was fought, which finally broke the Sikh power, and brought the whole Punjab under British rule.

Gulden, a silver coin of Austria-Hungary and also of Holland, worth about 40 cents; also called a florin.

Gulf of St. Lawrence, a W. inlet of the North Atlantic Ocean, touching all the British provinces of North America, Newfoundland, Canada, New Brunswick, Nova Scotia, and Prince Edward Island. It has three communications with the ocean; while in the opposite direction it narrows, at the W. end of Anticosti, into the estuary of the St. Lawrence river.

Gulf Stream, a well-defined current in the Atlantic Ocean. It is due to the reflux of the equatorial current. The condensation and superheating of the last-named current takes place mainly in the Caribbean Sea and the Gulf of Mexico, whence arises the name Gulf stream. Its temperature there is about 50°. It emerges as a defined hot current through the Straits of Florida, and courses in a N. E. direction at a little distance from the coast of the United States, so affecting the Bermudas as to make their climate semi-tropical. Between these islands and Halifax the Gulf stream is about 60 miles broad, 100 fathoms deep, and moves at the rate of 3 knots an hour. It is of a deep blue color, in marked contrast to the dull green of the Arctic reflux. The Gulf stream moves in a N. E. direction toward Europe. It is generally believed to be through its influence that the W. coast of the European continent is so much milder than the corresponding latitudes of America.

Gulick, John Thomas, an American clergyman; born in Kauai, Hawaii, March 13, 1832, of American parents; was graduated at Williams College in 1856 and studied theology at the Union Theological Seminary. He later went to China as a missionary and subsequently to Japan. He is a well-known writer on topics relating to evolution and natural history.

Gull, the name of a genus of natatorial birds. They are widely distributed along the shores of the several seas and oceans, feeding voraciously on fish, or at certain times going some distance inland to look after worms in plowed fields. They are slaughtered by thousands to provide plumes for ladies' hats.

Gull, Sir William Withey, an English physician; born in Thorpe-le-Soken, Essex, England, Dec. 31, 1816. For his treatment of the Prince of Wales in 1871 he received a baronetcy, and became physician-extraordinary to the queen. Died Jan. 29, 1890.

Gum, a vegetable secretion, sometime occurring in intercellular spaces, formed by the separation of the walls of cells; it is viscid, but not oily. The most typical kind of gum is Gum Arabic.

Gum Arabic, a gum obtained from the Acacia arabica, which grows abundantly in India and Arabia. It is yielded also by other kinds of acacia. Gum arabic occurs in transparent white tears, which are often colored yellow or brown by impurities; it cracks on exposure to the air on the surface; it is brittle, inodorous, and has a bland, mucilaginous taste.

Gun, a strongly constructed metal tube, from which destructive projectiles are expelled by the gradually increasing pressure of gas evolved from fired gunpowder or other explosive. The term comprehends every description of firearm, from cannons, mortars, and other heavy pieces of ordnance to the fowling piece, rifle, and pocket pistol.

Gun Battery, in fortification, the emplacement of two or more pieces of artillery, destined to act on the offensive or defensive. In field-artillery, the tactical unit of field-artillery, consisting of six or eight field guns under one command, together with the officers, men, horses, wagons, and stores.

Gun Cotton. Gun cotton was discovered by Schonbein in 1845. It is prepared by drying cotton-wool at 100°, and then leaving it for 24 hours in a mixture of one volume of nitric acid, specific gravity, 1.5, and three volumes of sulphuric acid, specific gravity, 1.85, the mixture being cooled to 10°. It is then washed with water, and, if required pure, again with a mixture of one part alcohol and three parts ether to remove the lower nitrates. Gun cotton finely divided explodes between 160°–170°. It keeps best if it is washed with soda. Compressed gun cotton burns like tinder, but is exploded by mercuric-fulminate.

Gunnery, in one important sense, the art of conducting the fire of artillery on land or on board ship. Any science exercised in the construction of guns, carriages, and ammunition, any talent in organization and tactics, is thrown away if the guns are not laid correctly on the target. Americans have always been noted for their superiority in gunnery, to which their naval victories over the British in 1812 and over the Spaniards in 1898 were chiefly due.

Gunnison, a river in Colorado, a tributary of the Grand river, and which passes through a remarkable canyon 15 miles in length.

Gunpowder, an intimate mechanical mixture of potassium nitrate (niter), sulphur and charcoal, which do not act on each other at the ordinary temperature, but when heated together arrange themselves into new forms evolving a very large amount of highly heated gas. These three ingredients may be mixed in greatly varying proportions, each being explosive. Experience has shown the following mixture to be of the best proportions:

Saltpeter 75 parts, charcoal 15 parts, and sulphur 10 parts.

According to Sir George Staunton gunpowder has been known in China and in India from a remote period of antiquity as an agent for blasting rocks. The statement, however, is doubtful. In Europe, Roger Bacon alluded to it in his work "Of the Nullity of Magic," about A. D. 1267. A German monk, Schwartz, about 1336, is said to have discovered the method of its manufacture.

The words "smokeless" and "noiseless" as applied to powder, are used in a comparative sense, as there is some smoke and some noise in nearly all these powders. It has been said that the report of a single Lebel rifle cannot be heard at a distance of more than 20 or 30 yards, that it may be said to make no smoke, and that the recoil is of no consequence. At 300 yards' range not a sound is heard when a volley is fired with it, and only a faint haze arises, which is almost imperceptible, while a shower of bullets is seen to fall on the targets, an effect produced seemingly without a cause.

Gunpowder Plot, a plot formed in England about A. D. 1604 by Robert Catesby, various Roman Catholics of rank, goaded into excitement by the penal laws directed against their faith and its professors, joining as accomplices. Their aim was to blow up the Houses of Parliament by gunpowder Nov. 5, 1605, and destroy king, lords, and commons by one blow. An anonymous letter of mysterious warning, sent to Lord Monteagle, having led to the discovery of the plot, various conspirators were executed Jan. 30 and 31, 1606, and one May 3 following. Among those put to death was Guy Fawkes, who had been caught in the vault below the House of Lords with matches and touchwood on his person ready to fire the train. Since 1605 all places connected with the Houses of Lords and Commons where explosives could be stowed away are annually searched at the opening of Parliament.

Gunsaulus, Frank Wakeley, an American clergyman and educator; born in Chesterville, O., Jan. 1, 1856. He graduated at the Ohio Wesleyan University in 1875. After 1887 he was pastor of a Congregational Church in Chicago, was the first director of the Armour Institute; resigned in 1901.

Gunter, Archibald Clavering, an American author; born in Liverpool, England, Oct. 25, 1847. When five years old he was taken to California by his parents. He was a mining and civil engineer in the West from 1867 until 1874, when he became a stock broker. In 1877 he removed to New York, where he devoted himself to writing plays and novels.

Gunther, Albert Karl Ludwig Gotthelf, a German ichthyologist; born at Esslingen, Wurtemberg, Oct. 3, 1830. He became coeditor of the "Annals and Magazine of Natural History," and author of "The Reptiles of British India," etc.

Gurney, Sir Goldworthy, an English inventor; born in Treator, England, Feb. 14, 1793. His inventions include the oxyhydrogen blowpipe, the lime-magnesium and oil-gas lights, the high-pressure steam jet, the tubular boiler, a steam carriage, etc., and he claimed to have been the first to observe the deflection of the magnetic needle by voltaic cross currents. He was knighted in 1863. He died in Reeds, England, Feb. 28, 1875.

Gurowski, Adam de, Count, a Polish author; born at Kalisz, Sept. 10, 1805. In early life he was a leading Polish patriot and an instigator of the revolution of 1830. In 1849 he came to the United States, and from 1861 to 1863 was a translator in the State Department at Washington. He died in Washington, D. C., May 4, 1866.

Gustafson, Zadel Barnes Buddington, an American author; born in Middletown, Conn., about 1841.

Gustavus I., commonly called Gustavus Vasa, King of Sweden from 1523 to 1560, and deliverer of his country; born, according to recent authorities, in Lindholmen, Upland, May 12, 1496. He was the son of Eric Johansson, a Swedish senator and governor of Aland, from whom he derived the surname of Ericsson. Both his parents are said to have been descended from the ancient kings of Sweden. He studied at the University of Upsala, and entered the service of Sten Sture the Younger, administrator of the kingdom in 1514. Sweden had by the union of Calmar become subject with Norway to the crown of Denmark. The country was at this time divided into two parties. There was a Danish party headed by the Archbishop of Upsala, and a Swedish party, which upheld the independence of the country, headed by the administrator whom it had raised to power. Gustavus fought with distinction under Sture against the Danes in 1517 and 1518. He was one of six nobles sent by Sture to Christian II. in 1518 as hostages for the safety of the king during an interview. Christian sent him to Denmark, where he was put under the charge of one of his relatives, Eric Baner, Lord of Kallo in Jutland. Here he remained more than a year, but hearing of the preparations made to subdue his country, he effected his escape and reached Lubeck in 1519. Christian II. was crowned at Stockholm on Nov. 4, 1520. On the 8th the heads of the Swedish party, among whom was Gustavus' father, were executed. By the beginning of 1521 Gustavus had raised a considerable force, and had repeatedly defeated the Danes. On Aug. 24 he was named administrator of the kingdom by the States which had assembled at Wadstena. On June 6, 1523, he was elected king by the Diet of Strengnas. On the 20th he became master of Stockholm, which he had besieged three times. He deferred his coronation to avoid taking the oath to support the Church, as he had become a convert to Lutheranism, and had determined to humble the clergy, whose power was excessive.

In 1527 he obtained the exclusion of the bishops from the senate and their subjection to the civil power. He now openly professed Lutheranism, and was crowned by a Protestant archbishop of Upsala on Jan. 12, 1528. The Lutheran religion was formally established at a diet held at Orebro in 1529. In 1544 the States assembled at Westeraas declared the kingdom hereditary in his house. He died in Stockholm Sept. 29, 1560.

Gustavus II., Gustavus Adolphus, King of Sweden; a grandson of Gustavus Vasa; born in Stockholm Dec. 9, 1594, and received a most careful education. He was trained to war under experienced generals, and at the age of 16 he took his place in the State council. Charles IX., the father of Gustavus, had been declared king to the exclusion of his nephew Sigismund, who, on accepting the crown of Poland during his father's lifetime, had abjured the Protestant religion. On the death of Charles, Gustavus succeeded him, with the consent of the States, as king-elect. Sweden was at this time at war with Denmark, and Gustavus, then in his 17th year, was in command of the army. He chose for his chancellor and first councillor Axel Oxenstiern, a man 10 years his senior, but already eminent for his ability, and who eventually proved himself to be one of the greatest of European statesmen. The war with Denmark was concluded through the mediation of England in 1613. Gustavus next made considerable conquests in Russia.

His attention was now diverted from Northern wars by the affairs of Germany. The oppression of the Protestants by Ferdinand II. excited his sympathy. He was alarmed by the progress of Wallenstein, which threatened to extend the empire to the Baltic, and by leaguing himself with the Protestants of Germany he might hope for easier and more extensive conquests than by struggling single-handed against the Northern powers. He named his daughter Christina heiress to the throne, embarked for Germany on May 30, 1630, and landed on June 24 with an army of 13,000 men in the island of Usedom on the coast of Pomerania. After repeatedly defeating the imperial generals, and conquering a great part of Germany, he was killed in the battle of Lutzen, Nov. 16, 1632. Gustavus differed from some other great commanders in preferring a small well-ordered army to a large one. He used to say that all over 40,000 men were an incumbrance. His character made him beloved by his soldiers, and he was served with a devotion which enabled him to effect great things with small means. The discipline which he imparted to the Swedish army and the prestige of success derived from his victories, lasted long after his death. His body was taken to Sweden.

Gustavus III., King of Sweden; born in Stockholm, Jan. 24, 1746; was the eldest son of Adolphus Frederick, Duke of Holstein, who had been called to the Swedish crown in 1743. He succeeded his father on Feb. 12, 1771. He found the country divided between two aristocratic factions, the adherents of France and Russia, known respectively as the Hats and Caps. He resolved to give the country a new constitution, and to increase the power of the crown. The nobles formed a conspiracy against him and resolved on his death. Three of them took an oath to murder him and drew lots which should carry out their intention. The lot fell on Captain Ankarstrom, who shot the king in the back at a masquerade at Stockholm March 16, 1792. He died on March 29.

Gustavus IV., Adolphus, King of Sweden; born in Stockholm, Nov. 1, 1778; succeeded, on the death of his father, March 29, 1792, but was under the guardianship of his uncle, the Duke of Sudermania, till 1796. He was deposed, and the Diet by a decree of May 10, 1809, declared his family forever incapable of succeeding to the crown of Sweden. His uncle, the Duke of Sudermania, was proclaimed king, under the title of Charles XIII., and in the following year adopted as his successor, Bernadotte, Prince of Pontecorvo. Gustavus died in poverty in St. Gall, Switzerland, Feb. 7, 1837.

Gutenberg, Johannes, or **Henne,** a German printer; born in Mainz, about 1400. At Mainz in 1449 or 1450, he entered into partnership with Johannes Fust or Faust, a wealthy goldsmith, who furnished the money required to set up a printing press. This partnership was, however, dissolved after the lapse of a few years, Fust bringing an action at law against Gutenberg to recover the sums he had advanced. In consequence of the legal verdict, Fust retained the printing concern, and carried it on in conjunction with Peter Schoffer of Gernsheim. Gutenberg, with the assistance of a Dr. Homery, afterward set up another printing press. He is considered the inventor of movable type. He died in Mainz, Feb. 24, 1468.

Guthrie, Samuel, an American chemist; born in Brimfield, Mass., in 1772. He was one of the original discoverers of chloroform, which he termed a "spirituous solution of chloric ether." His process was tested as early as 1831. He died in Sackett's Harbor, N. Y., Oct. 19, 1848.

Guthrie, Thomas, a Scottish clergyman; born in Brechin, Forfarshire, July 5, 1803. The work with which his name is chiefly identified out of Scotland was the introduction into Edinburgh, of the ragged school system, then recently originated in London and Aberdeen. His "Plea for Ragged Schools" (1847) is one of the most celebrated of his productions. In 1849 he received the degree of D. D. from the University of Edinburgh. Died in St. Leonard's, Feb. 24, 1873.

Gutierrez, Antonio Garcia, a Spanish dramatist; born in Chiclana, Cadiz, in 1812. He gave up medicine for the profession of letters; living at first in great destitution, until the play "El Trovador" made him famous and immensely popular. He visited the United States in 1844. Later he became a theatrical manager in Madrid. He died in Madrid, Aug. 26, 1884.

Guts Muths, Johann Christoph Friedrich, a German teacher; born in Quedlinburg, Prussian Saxony, Aug. 9, 1759. He is specially remembered for having introduced gymnastics as a branch of education in German schools. He died May 21, 1839.

Gutta-Percha, the inspissated juice of the gutta-percha tree. It occurs in tough, textile pieces of a light-brown color, which are soluble in benzene, chloroform, and bisulphide of carbon, insoluble in water, and only slightly soluble in alcohol and ether. Refined gutta-percha is used for making soles of boots impervious to water, for door handles, ear trumpets, golf balls, etc. It is made into bottles to contain hydrofluoric acid, as it is not acted on by that acid. Above all it is employed for coating submarine telegraph wires, partly to protect them from the salt water, partly to insulate them, gutta-percha being a decided nonconductor of electricity.

Gutta-percha Tree. It is a large tree, 60 or 70 feet high, its trunk having a diameter of two or three feet. It grows in Borneo, Sumatra, Singapore, and other islands of Southeastern Asia.

Gutzlaff, Karl Friedrich August, a German missionary to China; born in Pyritz, Pomerania, July 8,

1803. In 1828 he went to Bangkok, Siam, where he translated the Bible into Siamese, reaching China in 1831. During the rest of his life he lived mostly at Macao and Hong Kong, occupying himself with a translation of the Bible into Chinese, writing various books in Chinese, German, and English, and training native preachers to carry the Gospel into the interior. He rendered valuable assistance to the British during the war of 1840–1842 and the subsequent negotiations for peace. He died in Hong Kong, Aug. 9, 1851.

Guy, Thomas, an English philanthropist; founder of Guy's Hospital, Southwark, London; born in London in 1644. He contracted with the University of Oxford for the privilege of printing Bibles, which he continued to do for many years. By this means, and by selling out his original shares in South Sea stock at a great advantage, he amassed a fortune of nearly $2,500,000. He was a liberal donor to charitable institutions of all kinds. He died Dec. 27, 1724.

Guy of Warwick, the hero of one of the most ancient and popular of early English metrical romances. The hero, Sir Guy of Warwick, is the son of Segard, steward of Rohand, Earl of Warwick; his instructor in the exercises of chivalry, the famous Herand of Ardenne. Having fallen deeply in love with Felice, the fair and accomplished daughter of the earl, he fell into a grievous sickness, but was recalled to life by a promise of her hand when he had earned it by knightly deeds. He performed the most stupendous feats of valor, slaying the famous Dun Cow on Dunsmore Heath, and a most portentous dragon then ravishing Northumberland, which won for him the fair Felice. But remorse for all the slaughter he had done merely for a woman's love began to seize him, and after 40 brief days of wedded happiness he left his home in the dress of a palmer to visit the Holy Land. Later he retired to a hermitage at the place still called Guy's Cliff, near Warwick. Before his death he sent her parting ring as a token to Felice, and she arrived in time to close his eyes, survived him for but 15 days, and was buried in the same grave.

Guyon, Madame Jeanne Marie Bouvier de la Motte, a French mystic; the introducer in France of the system of Quietism; born in Montargis, April 13, 1648. At the age of 16 she was married to Jacques Guyon, after whose death in 1676 the tendency to mystic enthusiasm which had characterized her younger years again acquired ascendency, and she began the religious propagandism of her extreme views of self-abnegation, indifference to life and death, and even to future salvation or perdition. A commission of ecclesiastics, chief among whom was Bossuet, sat in judgment, and the doctrines of Madame Guyon were condemned (1695). This led to her being imprisoned for some years, in the Bastile, whence she was liberated in 1702. She died in Blois, June 9, 1717.

Guyot, Arnold, an American geographer; born near Neuchatel, Switzerland, Sept. 28, 1807; was the colleague of Agassiz, at Neuchatel in 1839–1848, and in 1848 accompanied him to the United States. In 1854 he was appointed Professor of Physical Geography and Geology at Princeton College. He had the management of the meteorological department of the Smithsonian Institution, where he more than once delivered courses of lectures, and in connection with which he published "Meteorological and Physical Tables." His other works include several biographies and a series of geographies and wall maps which are in general use in American schools. He died in Princeton, N. J., Feb. 8, 1884.

Guy's Hospital, a hospital in Southwark, London; founded by Thomas Guy. The first stone of the building was laid in 1722, and the hospital admitted its first patient in 1725, a few days after the death of its founder. The whole expense was $94,400, great part of which Guy expended in his lifetime, and he bequeathed $1,097,500 to endow it. The yearly average of patients is over 5,000; the out-patients relieved amount to above 80,000. The annual income is about $200,000, chiefly from estates in the counties of Essex, Hereford, and Lincoln.

Gvosdevi, a group of islands in Bering Strait, between North America and Asia. Imaglin, the largest, is 25 miles in length. They are low and destitute of vegetation.

Gwalior, a native State of Central India, the dominions of the Mahratta Maharajah Sindhia; area, 29,047 square miles; pop. 3,513,703. Since 1803 the country has been under British protection.

Gwalior, a town and capital of the State of Gwalior. Gwalior possesses two remarkable Hindu temples, and one of the most interesting examples of Hindu palace architecture in India; while Jain caves and rock sculptures abound on all sides. Pop. 104,083.

Gyges, King of Lydia, who obtained the throne by murdering his master, King Candaules, and marrying his widow, about 687 B. C. Gyges reigned 34 years, during the course of which he wrested Magnesia and Colophon from the Ionian Greeks, lent assistance to Psammetichus in his revolt in Egypt against Assyria, and, after stoutly defending himself for some time against the Cimmerians, was at last slain by them in 654 B. C.

Gymnasium, the name given by the Greeks to the public building where the young men, naked or nearly so (hence the name, from gymnos, naked), exercised themselves in leaping, running, throwing the discus and spear, wrestling, and pugilism. This institution was established in most of the cities of Greece and in Rome under the Cæsars. Its objects, however, did not remain confined merely to corporeal exercises, but were extended also to the exercise of the mind; for here philosophers, rhetoricians, and teachers of other branches of knowledge delivered their lectures.

In the United States, colleges are generally provided with gymnasia, and bodily exercises are becoming a feature of the public school system. Many police stations also have gymnasia.

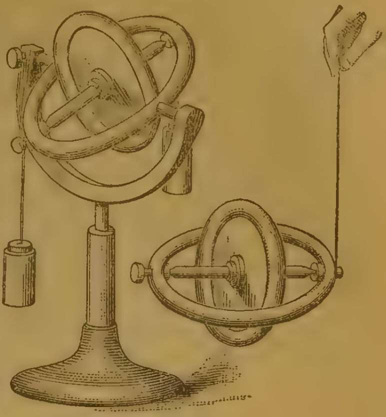
Gymnastics, the technical term used to designate any system of exercises specially designed to promote the development of physical, and especially of muscular powers. Such exercises may be either general or special. Special exercises are those designed to train particular muscles, thus in singing or playing on musical instruments the muscles of the mouth and chest, and of the hand and arm, are specially exercised. Gymnastics proper consist in exercises designed to promote muscular development without regard to the particular uses to which the developed power may be applied. It may be remarked in passing, that singing, dancing, violin-playing, billiards, cricket, football, bowling, rowing, military exercises, and similar amusements, afford means of physical education or development all the more valuable that it is acquired insensibly, and that such pursuits are more likely to be persevered in than any set of formal exercises which have no interest in themselves. The special value of formal gymnastic exercises is that they are capable of being scientifically arranged so as to secure not only a general development of muscular power, but what is of even greater value, an accurate knowledge of the uses of the various muscles, contributing to the economy of muscular power on which health as well as successful exertion depends, and especially that they are capable of being applied to each individual case, so as to meet, allow for, and as far as possible overcome defects in physical organization. For these purposes an elementary course of gymnastics is of great value to all, especially to the sedentary student.

The first or elementary stage of gymnastics, which should be practised by children of both sexes, consists in regular series of simple muscular movements without instruments; assuming poses or attitudes, saluting, making various flexures of the arms, legs, or body, rising on the toes, marching, etc. These exercises are performed at first slowly and carefully, afterward rhythmically to the word of command or the sound of music, such "musical drill" being now very common in schools. It is said that by a well regulated course of such exercises, without any accessories whatever, the strength of a boy may be doubled. These exercises form a necessary preparation for the gymnasium, in which, by means of complete apparatus and appliances, all the muscles of the body are regularly trained to their full development. Gymnasiums are fitted with such appliances as horizontal and parallel bars, trapezes hung from the roof, vaulting horses, ladders set horizontally and otherwise, climbing ropes and poles, weights to be raised by pulleys and ropes, besides such things as dumb-bells, bar-bells, Indian clubs, etc. There are now also pulling apparatus which may be fixed up in private houses and form a useful means of exercise at home. A gymnasium training is most effective when conducted by an experienced master. In default of this there are many useful little treatises which explain the various kinds of apparatus and give detailed directions for their use.

Gynæcology, that branch of medicine which treats of the diseases of women.

Gyp, pseudonym of Countess Gabrielle de Martel de Janville, a French novelist; born in the Chateau de Koetsal, Morbihan, about 1850. She s the creator of several new types, among them Paulette, Loulou, Bob, etc.; and has been a prolific writer.

Gyroscope, an instrument constructed by M. Foucault to make the otation of the earth visible. The principle on which it proceeds is this — that, unless gravity intervene, a rotatng body will not alter the direction in which its permanent axis points. In he gyroscope there is a rotating meallic disk, the middle point of whose xis is also the center of gravity of he machine. By this device the action f gravity is eliminated. The instrument, moreover, is so constructed that he axis of rotation can be made to oint to some star in the sky. Then, s the heavy disk whirls round, it is ound that the axis continues to point o the moving star, though, in consequence of this, apparently altering ts direction relatively to bodies on he earth. If, again, the axis be pointd to the celestial pole, which is fixed, no alteration in its position relative o bodies on the earth takes place. The only feasible explanation of these appearances is that the earth is revolving on its axis.



GYROSCOPE.

Gypsum. Technically gypsum is regarded as a mineral deposit, in some places constituting rock masses. It may be of any age. Near Paris it is Middle Eocene. Frapoli says that some gypsums were originally carbonates instead of sulphates of lime, and that they underwent metamorphism by the action of volcanic sulphurous or sulphuro-hydrous vapors. The principal producing States are Michigan, New York, Iowa, and Kansas. The United States ranks second to France in the world's production.

Gyulai Pal, a Hungarian poet; born in Klausenburg in 1826. He began as a journalist. Later he was made Professor of Hungarian Literature at the University of Budapest. For many years past he has been at work upon a satirical poem scathing the present age and its follies, called "Romhanyi," modeled upon Byron.

H

H**h,** the eighth letter and sixth consonant in the English alphabet, having as its most proper and distinctive sound that which is heard in such words as hart, hat, when, what, etc. In Latin and ancient Greek it was not considered as a true consonant, but merely as a breathing. H, among the Greeks, as a numeral, signified 8; in the Latin of the Middle Ages 200, and H with a dash over it 200,000. In music the Germans use this letter for the note we call B. Our B flat they simply call B.

Haarlem, Lake of, a former lake of Holland, adjoining and communicating with the Ij, between Haarlem and Amsterdam. The draining of it was commenced in 1840 and completed in 1853, and 45,000 acres of fertile land recovered. The soil thus reclaimed now forms a commune, which numbers about 16,000 inhabitants.

Habakkuk, in the Old Testament, the eighth of the minor prophets. It was composed when the Chaldean invasion was imminent, probably in the early part of the reign of Jehoiakim, about 610 B. C. The prophet's poetic genius is of a high order, the third chapter of his work being one of the finest compositions in the whole Old Testament. Nothing is known of the writer's history.

Habberton, John, an American journalist; born in Brooklyn, N. Y., Feb. 24, 1842. After service in the Civil War he became literary editor of the "Christian Union" (1874), and editorial writer on the New York "Herald" (1877). His best known novel is "Helen's Babies" (1876), of which over 150,000 copies were sold.

Habeas Corpus, in law, a writ (more fully habeas corpus ad subjiciendum) directed to the person detaining another, and commanding him to produce the body of the prisoner, with the day and cause of his caption and detention, to do, submit to, and receive whatsoever the judge or court awarding such writ shall consider in that behalf. It is applicable in all cases where a person in custody claims to be illegally detained, or wrongfully refused bail, or who desires to be removed from one court to another. The Habeas Corpus Act has been substantially incorporated into the jurisprudence of every State in the Union, and the right to the writ has been secured by the constitutions of most of the States, and the United States.

Habit, a tendency or aptitude for the performance of certain actions, acquired by custom, or a frequent repetition of the same act. Animals as well as mankind and to some extent plants even are influenced by this force, which in many cases becomes so strong as to deserve the proverbial phrase of being second nature.

Hachette, Louis, a French publisher; born in Rethel, Ardennes, France, May 5, 1800. In 1826 he established in Paris a publishing business, principally with the intention of issuing books calculated to improve school teaching and elevate the general intelligence. He was also a friend of the working classes, and the promoter of international copyright. He died July 31, 1864.

Hackee, or **Chipping Squirrel, The,** one of the most familiar of North American quadrupeds, found in great numbers in almost every locality. The general color of the hackee is usually a brownish-gray on the back, warming into orange-brown on the forehead and the hinder quarters. On the back and sides are drawn five longitudinal black stripes and two streaks of yellowish white, so that it is a most conspicuous little creature, and by these peculiar stripes may easily be distinguished from any other animal. The abdomen and throat are white. The length of the hackee is usually about 11 inches, the tail being about 4½ inches in length.

Hackett, Horatio Balch, an American clergyman; born in Salisbury, Mass., Dec. 27, 1808. He was one of the committee of New Testament revision, and with Ezra Abbot edited the American edition of Smith's "Bible Dictionary" (1868–1870). He died in Rochester, N. Y., Nov. 2, 1875.

Hackett, James Henry, an American actor; born in New York city, March 15, 1800. He was particularly successful in impersonating Yankees and Westerners, but was best known by his Falstaff, which he played first about 1832. He wrote "Notes and Comments on Shakespeare" (1863). Died in Jamaica, N. Y., Dec. 28, 1871.

Hacklander, Friedrich Wilhelm von, a German novelist and comedy writer; born in Burtscheid, near Aix-la-Chapelle, Prussia, Nov. 1, 1816; died in Leoni, July 6, 1877.

Hackmatack, a term applied in many parts of the United States to the American larch.

Hackney, a parish of Middlesex, England, now forming a suburb of London. It was at one time a favorite suburban residence of London citizens. In its earlier and fashionable days it is by some said to have given its name to hackney coaches.

Hackney Coach, a coach let out for hire. Cabs are now the common kind of hackney coaches.

Haddock, a fish of the same genus with the cod, and much resembling it n general appearance. It is taken both by trawl nets and lines. The usual bait for the long lines used to catch this fish is mussel. The haddock, when really of good quality, is perhaps the finest of all the Gadidæ. It does not "take salt" so well as the cod, but is often cured by drying and smoking. In March and April the haddock is out of season; in October, November, December, and January it is in its finest condition.

Haden, Francis Seymour, an English etcher and surgeon; born in London, England, Sept. 16, 1818. In 1857 he was elected a Fellow of the Royal College of Surgeons. His etching was undertaken as a relaxation from professional labors. The chief qualities of his work are vigor and breadth. He was president of the Society of Painter Etchers.

Hades, in Homer the Greek word Ades figures as the name of a god, in large measure corresponding to the Roman Pluto. After Homer it becomes a place to which the dead go. Both Greeks and Romans supposed the infernal regions to be in the center of the earth. To enter these, in the Roman opinion, the river Styx had to be crossed by the spirits of the dead, Charon, the ferryman, for a very small sum, rowing the boat. If, by any misfortune the body had been unburied, the soul had to wander 100 years on the banks of the Styx before it was taken across. Pluto was the king of the spirit world, Rhadamanthus its most noted judge.

In the Jewish belief, the place of the dead; the Hebrew Sheol, which occurs 65 times in the Hebrew Bible, and in 61 of them is rendered in the Septuagint Hades. In the Authorized Version of the English Bible it is translated in the Old Testament 31 times by "grave," 31 times by "hell," and 3 times by "pit." The ancient Hebrews conceived of Sheol as situated below, so that souls had to "go down" or descend before entering it.

Hading, Jane, a French actress; born in Marseilles, France, Nov. 25, 1859. She went on the stage in early childhood, and toured the United States in 1885.

Hadith, the traditions about Mohammed the Prophet's sayings and doings, which, as complementary to the Koran, form with it the supreme authority for all religious and legal questions of the Mohammedans.

Hadji, the title of the Mohammedan who has made a pilgrimage to Mecca, a religious act which every true believer is bound to perform at least once in his life; though minors, slaves, and lunatics are exempt. Hadji is the name of the celebration which takes place on the arrival of the caravans of pilgrims at Mecca, and a Mohammedan who has made the pilgrimage commonly bears for the rest of his life the title of hadji prefixed to his name.

Hadley, Arthur Twining, an American educator; born in New Haven, Conn., April 23, 1856; was graduated at Yale College in 1876; studied at the University of Berlin; was Professor of Political Science at Yale University in 1886–1899 and was then elected its president.

Hadley, James, an American philologist; born in Fairfield, N. Y., March 30, 1821. He was graduated at Yale in 1842, was for six years tutor and assistant professor there, and Professor of Greek from 1851. He was one of the American committee for the revision of the New Testament. He died in New Haven, Conn., Nov. 14, 1872.

Hadley, John, an English mathematician, the inventor of Hadley's quadrant and of a reflecting telescope; born April 16, 1682. The honor of having invented the sextant is claimed for Hadley, Godfrey, and Newton. Each seems, however, to have made his own discovery independently. Hadley described his instrument, which he called an "octant," to the Royal Society on May 13, 1731. He died Feb. 14, 1743.

Hadrian's Wall, a wall in the N. of England, sometimes called the Wall of Severus, though it is commonly believed to have been built by the Roman emperor Hadrian to protect the province from the barbarous tribes of the North. Considerable portions of it still remain.

Haeckel, Ernest Heinrich, a distinguished German naturalist; born in Potsdam, Prussia, Feb. 16, 1834. He became Professor of Zoölogy at the University of Jena, in 1865. His purely scientific works have been translated into many languages.

Hæmatemesis, blood effused into the stomach, and thence rejected, differing thus from hæmoptysis, hæmorrhage from the lungs.

Hæmatite, a mineral consisting chiefly of peroxide of iron; a valuable iron ore. There are two principal varieties, red hæmatite and brown hæmatite.

Hæmoglobin, an albuminoid substance which forms the chief part of the red corpuscles of the blood of vertebrata.

Hæmorrhage, bleeding from the heart, arteries, capillaries, or veins, capillary hæmorrhage being the commonest form. Generally though not invariably the vessels are ruptured. In a solid organ it is called an extravasation, hæmorrhagic infraction (in embolism), or apoplexy. Hæmorrhage from the nose is known as epistaxis; from the lungs, hæmoptysis; from the stomach, hæmatemesis; from the female organs, menorrhagia; from the urine, hæmaturia; from the bowels, melæna.

Hæmus, in ancient geography, the name applied to that part of the Balkan chain which separates Thrace from Thessaly. According to mythology, Hæmus, son of Boreas and Orithyia, having aspired to divine honors, was changed into this mountain.

Hafiz, the poetical name of Khwaja Shams-ad-din Muhammad, Persia's famous lyric-poet; born in Shiraz, about 1300. Hafiz seems to be most characteristic in his many "Ghazels" or odes, whose themes are his own emotions. He died in Shiraz in 1389.

Hag, the name of certain fishes of worm-like form and without eyes or scales. The mouth is formed for suction, is without lips, and furnished with fleshy filaments or barbels. There is a single median fang on the palate by means of which the hag makes its way into the interior of other fishes, such as the cod, ling, or haddock, where it lives parasitically. An American species is not uncommon in rivers of New York and New England.

Hagada, in Hebrew literature, a branch of the Midrash, or most ancient Jewish exposition of the Old Testament. It extends over the whole of these sacred books and is homiletic and poetical.

Hagedorn, Friedrich von, a German poet; born in Hamburg, April 23, 1708. He was successively in diplomacy, law, and trade, giving his leisure to literature. He died in Hamburg, Oct. 28, 1754.

Haggai, in the Old Testament, the 10th of the 12 minor prophets. Of the seer himself nothing is known. His book has always been regarded as canonical. The several dates are all in the second year of Darius the king — i. e., of Darius Hystaspes, B. C. 520.

Haggard, Henry Rider, an English novelist; born in Norfolk, England, June 22, 1856. He was a barrister by profession. At the age of 19 he accompanied Sir H. Bulwer as secretary to Natal, and served on the staff of Theophilus Shepstone during his mission to the Transvaal. He wrote several novels bearing on South Africa, which were very popular.

Haggis, a Scotch dish, usually made with the large stomach bag of a sheep, also one of the smaller bags called the king's hood, together with the lights, liver, and the heart.

Hagiographa, a Greek word, signifying sacred writings, first introduced by Epiphanius as the rendering of the Hebrew word Kethubhim = writings. In our present Hebrew Bibles the Hagiographa consist of 13 books thus arranged: Psalms, Proverbs, Job, Song of Solomon, Ruth, Lamentations, Ecclesiastes, Esther, Daniel, Ezra, Nehemiah, and I and II Chronicles.

Hague, The, the capital of the Netherlands, 2 miles from the North Sea and 15 N. N. W. of Rotterdam. It is one of the handsomest cities in the country, being intersected by canals and shady avenues of lime-trees, and having many fine public buildings and private houses. In the center of the city is the Vijver, or fish pond, to the S. of which stands the old castle of the counts of Holland. It consists of two courts, an outer and an inner; in this latter are the 13th-century Gothic knights' hall and the chambers in which the Dutch parliament holds its sittings. On one side of the outer court stands the gate tower, which was formerly used as a state prison, and in which the brothers De Witt were confined till dragged thence and torn to pieces by the populace (1672). The most noteworthy public buildings and institutions are the picture gallery, with a splendid collection of works by native painters (Paul Potter's "Bull" and Rembrandt's "Lesson in Anatomy"); the royal library, with 200,000 volumes, 4,000 MSS., and collections of coins and gems; the municipal museum, with several Dutch pictures; the Museum Meermanno-Westreenen, containing a collection of early printed books; the ethnographic museum, rich in Chinese and Japanese objects; the town-house; and the royal palaces. The church of St. James is the most important ecclesiastical edifice; it dates from the 14th century and is Gothic in style. The city owes its importance mainly to the fact that it is the residence of the court and the capital of the country; but it has also considerable manufacturing industry. Here numerous treaties have been signed and diplomatic conferences held, especially the Triple Alliance of 1668 and that of 1717. Here also was held the International Peace Congress of 1899. The Hague is also the seat of the International Court of Arbitration. Pop. (1900) 212,211.

Hague, Arnold, an American geologist; born in Boston, Mass., Dec. 3, 1840; was graduated at the Sheffield Scientific School of Yale College in 1863 and then studied abroad. Returning to the United States he spent about 10 years in the West investigating the Comstock lode. In 1877 the government of Guatemala appointed him geologist, and he visited the centers of volcanic activity and the chief mining districts of that country. In the following year he was employed by the Chinese government to study the gold, lead and silver mines in Northern China. In 1879, when the United States established the geological survey, he accepted a place in that bureau.

Hague William, an American clergyman and prose-writer; born in Pelham, N. Y., Jan. 4, 1808. He held pastorates in Baptist churches in Utica, N. Y., Boston, Providence, and New York; and was Professor of Homiletics in the Baptist Theological Seminary at Chicago in 1869. He died in Boston, Mass., Aug. 1, 1887.

Hahnemann, Christian Friedrich Samuel, the founder of Homœopathy; born in Meissen, Saxony, April 10, 1755. After graduating at the University of Erlangen, he practised medicine and held several public appointments in Dresden and elsewhere, and then settled in a small village near Leipsic. His observation and practice had convinced him, not only of the uselessness, but also of the injurious character of the prevailing methods of treatment, and he now abandoned all practice and devoted himself to chemical research and the translation into German of foreign scientific books. In these investigations he occupied 6 years. They proved to him that, in all instances the medicine which had cured produced a very similar condition in healthy persons to that it had relieved. This conclusion he published in an essay in "Hufeland's Journal," in 1796. It is in this essay that the principle of similia similibus curantur (similar things are cured by similar things) is first put forward by him, not as a theory but as a fact. His views at once met with vehement opposition. The very small doses of medicine which alone were needed according to his method, provoked the apothecaries, who refused to dispense his prescriptions, and he accordingly gave his medicines to his patients without charge. At Leipsic he remained till 1821, when a successful prosecution by the apothecaries drove him from the city. Under the protection of the Duke of Anhalt-Kothen he retired to Kothen, where he became a center of attraction to numerous invalids in all parts of the world. His wife dying in 1831, in 1835 he married a French lady, who induced him to remove to Paris, where he resided and practised till his death, July 2, 1843. A statue of him was erected in Leipsic in 1851.

Haidarabad, a State of Hindustan which comprehends the greater part of that central plateau of Southern India known as the Deccan, and is in possession of a Mohammedan prince, the Nizam; area, 80,000 square miles, exclusive of the Berar or Haidarabad Assigned Districts under British administration. The country is intersected or bounded by the Godavery, Kistnah, and their tributaries. The chief products are rice, wheat, maize, sugar cane, tobacco, cotton, indigo, fruits and timber. Pop. (1900) est. 12,750,000. Haidarabad, the capital, is on the Musi river at an elevation of 1,672 feet above the sea. Among the chief buildings are the extensive palace of the Nizam, the British residency, the Char Minar, or Four Minarets, built about 1590 as a Mohammedan college, but now used for warehouses; the Jama Masjid, or cathedral mosque, copied after that at Mecca. Pop. of city and suburbs (1900) est. 540,000.

Hail, the fall of aerial moisture in the form of ice. Hail occurs in two unlike forms, of different origin, which are now distinguished as hard, or true hail, and soft hail. The latter, often also known as sleet, denotes the fine, light rains that frequently fall in winter, rarely in summer, and seem an accompaniment of snow. The theory of hail formation entertained by many meteorologists is that atmospheric vapor, carried up by vertical motion of the air, is condensed into rain, and at a greater height into snow. The rain-drops, still carried upward, and held suspended for a time, are frozen into clear ice. They may fall in this condition, or may be caught during their fall by the vortex and again carried upward, gaining a new coating of ice, which is covered with frozen snow in the form of granular ice at a higher elevation. By a succession of such movements alternate layers of clear and granular ice are formed, the number of layers indicating the number of ascents and descents. These stones may be frozen together during their fall into the large, irregular masses often seen. Hail storms are limited in area and brief in duration. They are usually preceded by a sudden and considerable fall of the barometer, attended by wind, and followed by heavy rain.

Hail Mary, the best known and most general form of prayer which the Roman Catholic Church makes use of in honor of the Virgin.

Hainan, an island of China in the province of Kwang-tung, E. of the Gulf of Tonquin, separated from the mainland of China by a channel of but 10 miles in width; area, 12,000 square miles. The E. coast is steep and rocky; the N. W. coast is unapproachable because of sandbanks; but the S. coast is indented with several commodious and safe harbors. The interior of the island is mountainous and barren, but the low lands near the sea are fertile and well cultivated. Products, sugar, pearls, coral, wax, gold, and silver. The metropolis of the whole island is Kiang-choo-foo, the port of which has been open to European shipping from 1858. Though the Chinese have possessed this island since 108 B. C., yet there are in the interior some wild and hitherto unsubdued tribes.

Hair, a small filament issuing from the skin of an animal, and from a bulbous root; or the collection of mass of filaments growing from the skin of an animal, and forming an integument or covering. The structure is analogous to that of the teeth, the hair-follicle being an inversion of the skin, as the tooth-follicle is of the mucous membrane, and is formed like dentine by the conversion of pulp enclosed in a follicle, the external and densest part being the bulb, the soft interior the pulp. Hairs, like the nails, are horny protuberances from the epidermis, and show two parts, the cortical or investing (horny), and the medullary (the pithy interior), varying in different animals, from the hedgehog and porcupine to the musk-deer. Human hair is composed of a tube of horny fibrous substance, with a central medulla inclosing pigment cells; outside all are scales like tiles on a roof, forming delicate lines on the hair surfaces, transverse, oblique, or spiral. Emotion has been known to turn the hair white in a single night, but of all the animal tissues it is the most durable, being found very perfect in Egyptian mummies nearly 4,000 years old.

Haircloth, stuff or cloth made wholly or in part of hair, and used for the covering of chairs, couches, cushions, etc. In the form of a shirt it was formerly much used in penance. Horsehair for the manufacture of haircloth is principally derived from South America.

Hairdressing. As a matter of convenience, as well as of taste and fashion, the dressing of the hair has received much attention in all civilized nations, ancient and modern. Among savages the most extraordinary diversity as to the dressing of hair obtains; some frizzing it to the utmost extent; some fixing it in all sorts of perverse arrangements by means of frames, and some partially shaving the head. The Chinese pigtail, the American Indian scalp-lock, and the Moslem shaven head, with a small tuft left by which to be ultimately lifted into Paradise, are well known. According to Rev. J. G. Paton, missionary, some of the New Hebrides people have hair crisp and woolly, stuck full of feathers and shells; others have hair long and wavy, twisted into as many as 700 separate whip-cords on a single head, requiring the labor of five years to complete. Among modern civilized Europeans the courtiers and cavaliers of the 17th century adopted the practice of wearing those "love-locks" which excited the ire of the Puritans.

Hair Dyes, substances used for changing the natural color of the hair to a more favorable one, and for hiding the approaches of age, as indicated by the presence of gray hairs. Some of them are dangerous to health.

Hair Powder, a pure white powder, made from pulverized starch, scented with violet or some other perfume, and at one time, especially in the 17th and 18th centuries, largely used for powdering over the heads of both men and women. To make the powder hold, the hair was usually greased with pomade. In Great Britain in 1795 a tax of a guinea (afterward £1 3s. 6d.) was put on the use of hair powder, and at one time yielded $100,000 per annum, but it had the effect of causing hair powder to fall into general disuse. The French Revolution, which overturned so many institutions, contributed also to the people of Europe returning to natural and unpowdered hair. The tax on hair powder was repealed in England in 1869.

Hair Shirt, in ecclesiology and Church history, an instrument of penance, made of horse-hair; strictly speaking, it is a broad band rather than a shirt, and is worn round the loins, affording the wearer continual occasion of mortification.

Haiti, a republic on the island of Haiti, W. I.; bounded by the Dominican Republic, Atlantic Ocean, and Caribbean Sea; area, 10,204 square miles; capital, Port-au-Prince; pop. (estimated) 960,000.

The country is mountainous, being traversed by a volcanic range, which sends out lateral spurs, terminating in headlands on the coast. Cibao, the loftiest peak, reaches an altitude of 7,000 feet. The rivers are small and few in number and unnavigable.

The climate is semi-tropical, but tempered by the sea breezes, and this, with its well-watered soil, makes Haiti the most fertile of the West Indies. The industries of Haiti are mainly agricultural, coffee being the principal product. Cocoa, cotton, and tobacco are grown, and considerable rum and other spirits distilled. The mineral resources are undeveloped, but are known to be of considerable importance. Copper, iron, nickel, gypsum, limestone, and porphyry are found in the N., but are but little worked.

The exports consist principally of coffee, cocoa, logwood, cotton, hides, skins, mahogany, and honey. The import trade is carried on principally with the United States, Great Britain, France, and Germany.

The government is that of a republic, the present constitution dating from June 14, 1867. The legislative authority rests in a National Assembly, divided into two chambers, the Senate and the House of Representatives. The House is elected by male vote for a term of three years, while the members of the Senate are elected by the House for a term of six years. The executive power is vested in the President, elected by the National Assembly, and sometimes by the troops, for a term of seven years. The administration is carried on under the president by the heads of four departments. Haiti is in fact a military despotism, and some of the despots have called themselves "king" and "emperor."

The authorized religion is nominally Roman Catholic, but heathenism is prevalent, including voodoo rites and human sacrifices. Instruction in elementary grades is free, and supported by the government to the extent of $1,000,000 annually. There were in 1900, 400 national schools, besides private schools, and 5 public lycees.

Haiti was a French colony previous to 1804 when it was proclaimed independent. The inhabitants are mostly negroes, speaking either French or a dialect known as Creole French.

Hajilij, an Egyptian, Indian, and African tree, cultivated for its edible fruit, from the seeds of which an oil is expressed.

Hake, a genus of fishes of the cod family, having a flattened head, an elongated body, two dorsal fins, of which the first is short, and the second very long, one very long anal fin, and the mouth destitute of barbels. One species is common in the Strait of Magellan and on the coasts of Chile, and also occurs in New Zealand.

Hake, Thomas Gordon, an English poet and physician; born in Leeds in 1809; died in London Jan. 11, 1895.

Hakim-Ben-Allah, an Arabian impostor who flourished in the 8th century. He led a schism from Mohammedanism, but was overpowered and committed suicide. His story forms an episode in "Lalla Rookh."

Hakluyt, Richard, an English author; born about 1553; was educated at Oxford University. He was the author of "Four Voyages Touching the Discovery of America and Islands Adjacent to the Same" (1582); "Four Voyages to Florida" (1587); "The Principal Navigations, Voyages, and Discoveries Made by the English Nation"; etc. He died Oct. 23, 1616.

Halacha, one of two branches of exposition in the Midrash or most ancient Jewish exposition of the Old Testament, the other being the Hagada. The object of the Halacha was to ascertain the bearing of the Mosaic law on matters to which it did not directly allude.

Halberd, a weapon formerly much used by soldiers, consisting of a pole about 5 feet in length, surmounted by a head of steel, partly crescent-shaped. The poleax was its prototype.

Halcyon, in ordinary language, the kingfisher. It was popularly supposed that these birds nested and laid their eggs in seaweed, etc., floating on the sea, and that they had the power of calming the sea.

Halcyon Days, a name given by the ancients to the seven days which precede and the seven which follow he shortest day of the year, on account of a fable that during this time, while the halcyon bird or kingfisher was brooding, there always prevailed calms at sea. From this the phrase 'halcyon days" has come to signify imes of happiness and tranquillity.

Haldane, Robert, a Scottish philanthropist; born in London, England, Feb. 28, 1764. He founded a Society for the Propagation of the Gospel at Home, and built so many "tabernacles" and supported so many itinerant preachers that in 12 years he had expended more than $350,000. In he year 1817 he lectured to theologcal students at Geneva and Montauban, and returned to Scotland in 1819, aking an active interest thereafter in all religious questions, as the Apocrypha and Sabbath controversies. He died in Edinburgh, Scotland, Dec. 12, 1842.

Haldeman, Samuel Stenman, an American naturalist; born in Locust Grove, Pa., Aug. 12, 1812. He was Professor of Natural Sciences at he University of Pennsylvania in 1851–1855; and held the chair of Comparative Philology there in 1869–1880. He died in Chickies, Pa., Sept. 10, 1880.

Hale, Benjamin, an American ducator; born in 1797; was graduated at Bowdoin College in 1818; became a Protestant Episcopal clergyman; died in 1863.

Hale, Charles Rueben, an Amercan clergyman; born in Lewiston, Pa., March 14, 1837; was graduated t the University of Pennsylvania in 1858; held important posts in the Protestant Episcopal Church; and was made bishop in 1892. He died in Cairo, Ill., Dec. 25, 1900.

Hale, Edward Everett, an Amercan author and Unitarian clergyman; born in Boston, Mass., April 3, 1822. He was graduated at Harvard College n 1839, and in 1856 was called o the South Congregational (Unitaian) Church, Boston. During his ministerial career he was active in soial, educational, and philanthropic nterprises; organized the Harry Wadsworth Club, which has numerus branches in the United States and Europe, and the Look-up Legion among American Sunday-schools; edited "Original Documents from the State Paper Office, London, and the British Museum, illustrating the History of Sir W. Raleigh's First American Colony and the Colony of Jamestown," and many historical works, pamphlets, and papers; contributed largely to the periodical press, and attained wide popularity as a lecturer. To the rising generation he is best known as a writer of charming fiction and history.

Hale, Horatio, an American ethnologist; born in Newport, N. H., May 3, 1817. Shortly after graduating at Harvard College, he was made philologist to the government exploring expedition under Captain Wilkes, and studied the languages of the Pacific Islands, North and South America, Australia, and Africa. He died in Clinton, Canada, in 1896.

Hale, John Parker, an American statesman; born in Rochester, N. H., in 1806. He was United States attorney for his State in 1834–1841. Elected to Congress, in 1842, as a Democrat, his name was afterward removed from the party ticket because he refused to support the annexation of Texas. The struggle that followed ended in a victory for the Anti-slavery party, and in 1847 Hale was elected to the United States Senate, where he served for 16 years. He was the Free-soil candidate for the presidency in 1852, but received under 5 per cent. of the total popular vote. He was minister to Spain from 1865 to 1869, and died in Dover, N. H., Nov. 19, 1873.

Hale, Sir Matthew, Lord Chief-justice of England; born in Alderley, Gloucestershire, England, Nov. 1, 1609. He acted as a puisne judge of the Common Pleas till Cromwell's death, but refused to have his commission renewed by Richard Cromwell. After the Restoration he was made Chief-Baron of the Court of Exchequer, and 11 years later was transferred to the Chief-justiceship of the Court of King's Bench. He resigned his office in February, 1676, and died in Alderley on Christmas day of that year.

Hale, Nathan, an American patriot; born in Coventry, Conn., June

6, 1755. He rose to the rank of captain in the Continental army, and, having volunteered to penetrate the British lines and procure intelligence for Washington, was detected, and executed as a spy in New York city, Sept. 22, 1776. A statue was erected to his memory in New York in 1893.

Hale, Sarah Josepha (Buell), an American author and editor; born in Newport, N. H., Oct. 24, 1788. Left a widow in 1822 with five small children, she supported her family by literary work. From 1828 to 1837 she edited the Boston "Ladies' Magazine," and when this periodical was consolidated with "Godey's Lady's Book," published in Philadelphia, she became editor. She retired from literary life in 1877, after writing several books in addition to her other labors. For more than 20 years she advocated the keeping of Thanksgiving Day as a national festival, to be held on the same day throughout the country, as it has been observed since 1864, when President Lincoln adopted her suggestion. She died in Philadelphia, Pa., April 30, 1879.

Hale, Susan, an American author, sister of Edward E. Hale; born in Boston, Mass., Dec. 5, 1833.

Hales, Stephen, an English philosopher; born in Beckesbourn, Kent, England, Sept. 7, 1677. His first important publication was "Vegetable Staticks, or Experiments on the Sap of Vegetables" (1727), which may be regarded as the starting point of our true knowledge of vegetable physiology. In "Hæmastaticks" (1733), a second part of this work treating of the circulation of the blood, Hales gives results obtained by experimental methods of investigation like those now in use in studying physiology. His ventilating machines were introduced into the London prisons. He also invented machines for distilling sea-water, preserving meat, etc. He died in Teddington, Middlesex, England, Jan. 4, 1761.

Halevy, Jacques Francois Fromental Elie, a French composer; born of Jewish family in Paris, France, May 27, 1799. Among his pupils were Gounod, Victor Masse, Bazin, and George Bizet, who married his daughter. Admitted to the Academy of Fine Arts in 1846, he became perpetual secretary in 1854. He died in Nice, March 17, 1862.

Halevy, Joseph, an eminent French Orientalist and traveler; born in Adrianople, Turkey, Dec. 15, 1827. In 1868 he traveled in North Abyssinia; next he traversed (1869–1870) Yemen in quest of Sabæan inscriptions for the French Academy — one of the most fruitful journeys ever made by an archæologist. No European face had been seen in the Jowf since the soldiers of Ælius Gallus had visited it in the year 24 A. D., and Halevy traveled as far N. as Bled Nedjran and was able to collect as many as 860 inscriptions.

Halevy, Ludovic, a French dramatist; born in Paris, France, Jan. 1, 1834. In 1861 he became secretary to the Corps Legislatif. He first made himself known as the writer of the librettos to Offenbach's burlesques (partly in collaboration with Meilhac). He wrote besides a large number of vaudevilles and comedies, and also some novels. Halevy was admitted to the Academy in 1886.

Halfblood, in law, relationship by being born of the same father, but not of the same mother; or born of the same mother, but not of the same father.

Halfbreed, in anthropology, the offspring of parents of different races, though the term is usually confined to the children of one of the white race and a Red Indian. Halfbreeds, specifically, two tribes, one at Red River Settlement, chiefly employed in agriculture, the other subsisting by hunting. The term is much more in use in Canada than in the United States.

Half-caste, one born of a European father and a Hindu or Mohammedan mother, or more rarely of a Hindu or Mohammedan father and a European mother; a Eurasian, an East Indian.

Half-crown, a silver English coin of the value of two shillings and sixpence (60 cents).

Haliburton, Thomas Chandler, a Canadian-American jurist and author; born in Windsor, Nova Scotia, in December, 1796. He was raised to the bench as chief-justice of the Common Pleas in 1829, and in 1842 became judge of the Supreme Court. In 1856 he retired from the bench and took up his residence in England. In 1858 he received the degree of D. C. L. from the University of Oxford, and in 1859 entered Parliament as Conservative member for Launceston. He is best known as the author of "Sam Slick." He died in Isleworth, near London, England, Aug. 27, 1865.

Halicarnassus (originally called Zephyria), a Greek city of Caria, Asia Minor, on the Ceramic Gulf. It was founded by Dorian colonists from Trœzen, and defended by several citadels, one of which, Salmacis, was deemed impregnable. Alexander the Great destroyed the city by fire; but the inhabitants took refuge in the citadel, which successfully resisted his arms. The city was afterward rebuilt, but it never recovered its ancient importance or prosperity. Halicarnassus was the birthplace of the Greek historians Herodotus and Dionysius. The site of the city is occupied by the modern Budrun.

Halidon Hill, an eminence about a mile to the N. W. of Berwick, the scene of a disastrous defeat of the Scots by the English, July 19, 1333. Edward III. of England had laid siege to Berwick, the governor of which promised to surrender July 20, if not previously relieved. On July 19, Archibald Douglas, regent of Scotland, led a Scotch army to the relief of the town, and attacked the English at Halidon Hill, but was totally routed with the loss of 10,000 men.

Halifax, a municipal and parliamentary borough of England, in York county (West Riding), on the Hebble, 36 miles W. S. W. York. Halifax commands abundant supplies of coal and water, and an extensive inland navigation connecting it with Hull and Liverpool. It is one of the centers of the woolen and worsted manufactures in Yorkshire. Pop. 104,997.

Halifax, a city, port of entry, capital of the province of Nova Scotia, and county-seat of Halifax Co., on Halifax Harbor. It is the largest community and only city in the province. The harbor of Halifax is one of the best in the world, 6 miles long, with an average width of a mile, and protected by 11 fortifications. Halifax is the chief British naval station in North America, and in 1901 was the only station on the Atlantic coast occupied by British troops.

The Citadel, a fortress of earth and granite, occupies the summit of the hill commanding the city, is over a mile in circumference, is the strongest fortification in American and one of the strongest in the world, and the work of many years.

Halifax harbor was originally known as Chedabucto or Chebucto bay, but in 1749 the city was founded on the W. shore by Lord Cornwallis, made the capital of Nova Scotia, then including New Brunswick, and named in honor of the Earl of Halifax. It was incorporated as a city in 1842. The city sends two members to the Canadian House of Commons, and three to the Provincial Legislature. Pop. (1891) 38,496; (1901) 40,787.

Hall, the large principal apartment of the castles and mansions of the Middle Ages. In it the king or the lord of the manor gave audience, administered justice, received and entertained his retainers and guests, and performed all the public acts of feudal life. At one end was a raised platform or dais, on which the table of the lord of the manor was placed, and where his more honored guests sat along with him. The retainers sat at a table which ran along the lower part of the hall.

Hall, Asaph, an American astronomer; born in Goshen, Conn., Oct. 15, 1829. In 1877, with the 26-inch equatorial of the Naval Observatory, he made what, next to the discovery of Neptune, ranks as the most important discovery of the 19th century, the detection of the two remarkable satellites of Mars. Our knowledge of the difficult satellite systems of Mars, Saturn, Uranus, and Neptune depends almost entirely on his work. As a careful and accurate observer he was unrivaled.

Hall, Basil, a British author; born in Edinburgh, Scotland, Dec. 31, 1788; died in Gosport, England, Sept. 11, 1844.

Hall, Baynard Rust, an American author; born in Philadelphia, Pa., in 1798; died in Brooklyn, N. Y., Jan. 23, 1863.

Hall, Charles Cuthbert, an American educator; born in New York, Sept. 3, 1852; was graduated at Williams College in 1872, and studied theology at the Union Theological Seminary and in London and Edinburgh. In 1897 he was elected president of Union Theological Seminary.

Hall, Charles Francis, an American Arctic explorer; born in Rochester, N. H., in 1821. He made two search expeditions, in 1860–1862 and 1864–1869, living alone among the Eskimo, and bringing back some relics; and in 1871 he sailed in command of the government ship "Polaris," on an "expedition to the North Pole." He took his vessel for 250 miles up the channel leading from Smith's Sound, and on Aug. 29 reached 82° 16′ N.—at that date the highest N. latitude ever reached; then turning S., he went into winter-quarters at Thank God Harbor, Greenland (81° 38′ N.). Here on his return from a sledge expedition to the N., he was taken suddenly ill, and died Nov. 8, 1871. Among the valuable results of Hall's work were the exploration of the West Greenland Channel, and the extension of Greenland and Grinnell Land, N.

Hall, Christopher Newman, an English Congregational preacher; born in Maidstone, England, May 22, 1816. During the Civil War he favored the Union side, and in 1865 visited the United States. This visit was followed by another in 1873, when he delivered lectures in the principal cities. His third visit, which was brief, was made in 1884. He died in London Feb. 18, 1902.

Hall, Fitzedward, an American philologist; born in Troy, N. Y., March 21, 1825. He was graduated from Harvard College in 1846; spent many years in India and made a thorough study of its tongues, contributing to local journals original translations in prose and verse. He received the D. C. L. from Oxford in 1860. Settling in London in 1862, he accepted the chair of Sanskrit and Indian jurisprudence in King's College. He was the first American to edit a Sanskrit text. His contributions to our knowledge of Hindu and allied literatures are of inestimable value, and his text books in this field are valuable and authoritative.

Hall, Granville Stanley, an American educator; born in Ashfield, Mass., May 6, 1845; was graduated at Williams College in 1867; was Professor of Psychology at Antioch College, O., in 1872–1876; accepted the similar chair at Johns Hopkins University in 1881; and was chosen president of Clark University in 1888.

Hall, James, an American jurist and author; born in Philadelphia, Pa., Aug. 19, 1793. He served during the war of 1812–1814, and in 1818 he was elected judge of the Circuit Court of Illinois, and also State treasurer. In 1833 he took up his residence in Cincinnati, where he devoted himself to the mixed pursuits of banking and literature. He died near Cincinnati, O., July 5, 1868.

Hall, James, an American geologist and palæontologist; born in Hingham, Mass., Sept. 12, 1811. He was a member of several scientific societies in Europe and in the United States. He died near Bethlehem, N. H., Aug. 7, 1898.

Hall, John, an Irish-American Presbyterian clergyman; born near Armagh, Ireland, July 31, 1829. He was educated at Belfast College. In 1867 he became pastor of the Fifth Avenue Church, New York. For years he was Chancellor of the University of the City of New York; he was also trustee of Princeton University; of the Union Theological Seminary, and of Wellesley College; president of the Presbyterian Board of Home Missions, and chairman of the Church Extension Committee, at the same time giving much attention to the work of the Evangelical Alliance, the City Mission, etc. He died in Bangor, County Down, Ireland, Sept. 17, 1898.

Hall, Lyman, one of the signers of the Declaration of Independence; born in Connecticut about 1731. He was graduated at Yale College in 1747. Later he moved to Georgia; represented that State in Congress 1775–1780, was appointed governor of his State in 1783, and died in 1791.

Hall, Marshall, an English physician and physiologist, the son of Robert Hall, who introduced the practice of bleaching cotton with chlorine; born in Basford, in Nottinghamshire, England, Feb. 18, 1790. Hall claimed in 1833–1837 to have been the first to show the independence of the phenomena of the reflex action of the spinal system of sensation, to work out the laws of their causation, and to apply the knowledge of them to the comprehension of nervous diseases. His name is also associated with a well-known method of restoring suspended respiration. He died in Brighton, England, Aug. 11, 1857.

Hall, Thomas, an American inventor; born in Philadelphia, Pa., Feb. 4, 1834; was educated at the University of Pennsylvania; subsequently took a course in mechanics n Europe. His inventions include a mechanism for printing by touching keys; a keyed typewriter; the Hall typewriter; several sewing machines; drill-grinding and other machinist tools, etc.

Hallam, Henry, an English historian; born in Windsor, England, July 9, 1777. His father was dean of Bristol. His "View of the State of Europe during the Middle Ages" (1818) was the first great result of his studies and researches. His masterly work on the "Constitutional History of England" was given to the world in 1827. The next great work of Hallam, published in 1837–1839, was his "Introduction to the Literature of Europe in the 15th, 16th, and 17th Centuries." He died in Penshurst, Kent, England, Jan. 21, 1859.

Halle, a city of Prussian Saxony. Its famous university was founded in 1694 by Frederick I. of Prussia; after having been suppressed by Napoleon n 1806, and again in 1813, it was reëstablished in 1815 and incorporated with the University of Wittenberg, which had been dissolved during the war. The most important industrial product of Halle is salt, obtained from brine springs within and near the town, which have been worked from before the 7th century, and still yield about 114,500 hundred-weight annually. The industries next in importance are machine-making, sugar-refining, printing, brewing, the manufacture of mineral oil, and fruit cultivation. Originally a border fortress against the Slavs, it became in the 10th century an appanage of the Archbishop of Magdeburg, and by the 12th century was famous as a commercial city. In that and the 13th century Halle was a powerful member of the Hanseatic League, and successfully withstood a fierce siege by the Archbishop of Magdeburg in 1435, but finally fell into his hands in 1478. Terribly impoverished during the Thirty Years' War, it was incorporated with Brandenburg at the peace of Westphalia. Pop. (1900) 156,503.

Halle, Sir Charles, an eminent English pianist; born in Hagen, Westphalia, April 11, 1819. He was knighted in 1888; died Oct. 25, 1895.

Halle, Lady, a famous violinist; Her first appearance in London was at a Philharmonic concert in 1849. Thenceforward her career was one long success, both in England and on the Continent.

Halleck, Fitz-Greene, an American poet; born in Guilford, Conn., July 8, 1790. By his mother he was descended from John Eliot, "the apostle of the Indians." He became a clerk in a bank in New York in 1811, and in 1832 the private secretary of John Jacob Astor; in 1849 he retired, on an annuity of $200 left him by Astor, to his native town, where he spent the remainder of his days. From his boyhood Halleck wrote verses, and in 1819 he contributed with Joseph Rodman Drake, a series of humorous satirical papers in verse to the New York "Evening Post." In the same year he published his longest poem, "Fanny" (2nd edition, enlarged, 1821), a satire on the literature, fashions, and politics of the time. He visited Europe in 1822, and in 1827 published anonymously an edition of his poems (3d edition, enlarged, 1845). In 1865 he published "Young America," a poem of 300 lines. His complete "Poetical Writings" was published in 1869. He died in Guilford, Conn., Nov. 19, 1867.

Halleck, Henry Wager, an American military officer; born in Westernville, N. Y., Jan. 16, 1815. He was graduated at the United States Military Academy in 1839. During the Mexican War he was employed in the operations on the Pacific coast, and for services was brevetted captain in 1847. On the outbreak of the Civil War he reëntered the army, and in November, 1861, was appointed Commander of the Department of the Missouri. In March, 1862, Halleck's command was extended so as to embrace, under the name of the Department of the Mississippi, the vast stretch of territory between the Rocky Mountains and the Alleghanies. In July he became General-in-Chief of the armies of the United States; and henceforth he directed from Washington the movements of the generals in the field, till, in March, 1864, he was superseded by General Grant. Halleck was chief of staff till 1865, commanded the Military Division of the Pacific till 1869, and that of the South till his death, Jan. 9, 1872.

Hallelujah, Alleluia, or **Halleluiah,** an ascription of praise to God, occurring at the commencement of many psalms. Hence it became a doxology in the Jewish synagogues.

Haller, Albrecht von, a Swiss anatomist; born in Bern, Switzerland, Oct. 16, 1708. His name is particularly connected with muscular irritability, the circulation of the blood, and numerous excellent descriptions, of an anatomisco-physiological character, of important parts of the human body. He died in Bern, Switzerland, Dec. 12, 1777.

Halley, Edmund, an English astronomer and mathematician; born in Haggerston, near London, England, Oct. 29, 1656. In 1676 he published observations on a spot in the sun by which the motions of that body on its axis were determined. In 1680 he made the tour of Europe, and on the passage to Calais was the first to observe the great comet — the same which visited the Western hemisphere again in 1835. After his return, he gave his attention to the theory of the planetary motions, which made him acquainted with Sir Isaac Newton, who intrusted to him the publication of his "Principia." In 1703 he was appointed Savilian Professor of Geometry at Oxford; in 1705 he made public his valuable researches on the orbits of comets; in 1713 he became secretary to the Royal Society; and in 1719 he succeeded Flamsteed as Astronomer Royal. He died in 1742.

Halliday, Samuel Byram, an American Congregational minister; born in New Jersey, 1812. He was for nearly 20 years assistant of Henry Ward Beecher at Plymouth Church, Brooklyn. He died in Orange, N. J., July 9, 1897.

Hallock, Charles, an American journalist; born in New York in 1834. He was founder and proprietor (1873-1880) of the "Forest and Stream," and wrote "The Fishing Tourist" and other books.

Hallock, William Allen, an American clergyman, noted as the lifelong secretary of the American Tract Society; born in Plainfield, Mass., June 2, 1794; died in New York. Oct. 2, 1880.

Hall of Odin, among the Scandinavian people, those rocks from which the Berserkers, when tired of life, flung themselves into the sea; so named because they were regarded as the portals of the Scandinavian Valhalla.

Hallowell, Richard Price, an American writer and merchant; born in Philadelphia, Pa., Dec. 16, 1835. He was a follower of Phillips and Garrison in the abolition movement, and wrote much for the "Index."

Halloween, the name popularly given to the eve or vigil of All Hallows, or festival of All Saints, which being Nov. 1, Halloween is the evening of Oct. 31. In England and Scotland it was long consecrated to harmless fireside revelries, with many ceremonies for divining a future sweetheart. See Burns' "Halloween" and Chambers's "Book of Days." The similar Irish customs are illustrated in Maclise's "Drop-apple Night."

Hallue, a French river, noted for the battle on its banks in 1870 between the French and Germans.

Halo, Parhelion, or **Corona,** various meteorological phenomena. One class of halo is very common. When the sun or moon is partially obscured by a mist or cloud, the latter not being of the species called cirrus or curl-cloud, it is almost invariably surrounded by colored rings of a few degrees only in diameter, called Coronæ (crowns). Those surrounding the sun cannot always be seen directly, but by reflection at the surface of still water, or of a glass plate blackened at the back, the glare of the sunlight is sufficiently diminished to permit the halo to be seen. This meteor depends on the diffraction of light, caused by the small spheres or vesicles of water which compose the cloud, and can easily be imitated by looking at a bright object through a piece of glass which has been breathed on, or dusted with lycopodium seed. If the diffracting particles be all of the same size, the rings are well marked; but since they become smaller as the particles increase in size, ordinary fogs and clouds, which generally contain particles of very different dimensions, give a composite effect which spoils the distinctness and greatly limits the number of the rings. Thus, no general rule can be given for the number of colors of the halo, but it may be observed that their diminution in diameter is a sign of the increase in size of the watery spheres which cause them, and therefore in general betokens approaching rain, which comes when the particles are no longer able, on account of their size, to float in the air without sensibly falling. A different form of halo is sometimes seen to surround the shadow of the spectator's head, when cast by the sun on a bank of fog; in this case it is sometimes called a "glory." To this class belong the colors generally seen about the famous "Specter of the Brocken."

Halpine, Charles Graham (pseudonym) Miles O'Reilly, an Irish-American author; born in Ireland in November, 1829. He was the son of Rev. Nicholas Halpine and was educated in Dublin. He came to the United States at 23 and became a New York journalist. He served through the Civil War, attaining the rank of colonel. He died in New York city Aug. 3, 1868.

Hals, Franz, the Elder, a Dutch portrait and genre painter; born probably in Antwerp, in 1580 or 1581. He is usually regarded as the founder of the Dutch school of genre-painting. He died in Haarlem, Netherlands, in August, 1666.

His brother, Dirk Hals (before 1600–1656), a pupil of Abraham Bloemaert, was also an excellent genre painter. Several of Franz's sons were artists, the most celebrated being Franz Hals, the Younger, who flourished from about 1637 to 1669.

Halstead, Murat, an American journalist; born in Ross, Butler Co., O., Sept. 2, 1829. He spent his minority on a farm. At 18 he began writing for newspapers. In 1851 he finished his schooling at Farmers' College, near Cincinnati, and then decided to study law. He did local newspaper reporting on several Cincinnati papers, and in 1853 became manager of a department on the Cincinnati "Commercial." The following year he acquired a small interest in the paper, and it began rapidly to increase in circulation and influence, so that in 1866 it was considered one of the most potent newspapers in the West. The "Commercial" combining with the "Gazette," its rival, the Cincinnati "Commercial Gazette" became the recognized organ of the Ohio Republicans. In 1890 he removed to Brooklyn, N. Y., and edited the "Union" newspaper. He is a vigorous and popular writer.

Ham (Hebrew, burnt, swarthy, black), a son of Noah. The impiety revealed in his conduct toward his father drew on him, or, rather, according to the Bible statement, on his son Canaan, a prophetic malediction (Gen. ix: 20–27). Ham was the father of Cush, Mizraim, Phut, and Canaan, that is, the ancestor of the Canaanites, Southern Arabians, Ethiopians, Egyptians and the Africans in general (Gen. x: 6–20).

Ham, a town in France, department of Somme, on the river of that name, 12 miles S. W. of St. Quentin. Its ancient fortress or castle was rebuilt by the Comte de Saint Pol in 1470, and now is used as a state prison. It is memorable as the place of confinement of Joan of Arc, Moncey, and others; of Louis Napoleon from 1840 till 1846, and others.

Hamadan, a town of Persia, in the province of Irak Ajemi, situated at the N. base of Mount Elwend, 160 miles W. S. W. of Teheran. It contains Avicenna's tomb, and others affirmed to be those of Mordecai and Esther. Hamadan is generally believed to occupy the site of the Median Ecbatana. Pop. 25,000 to 30,000.

Hamadryad, in Greek and Roman mythology, a wood-nymph, supposed by the Greek and Roman poets to live and die with the tree to which she was attached.

Hamadryas, a name given to a kind of baboon; also the Hamadryas elaps, which is the largest poisonous snake of the Old World, larger and more dangerous than any of the cobras, with which it has almost the same geographical range.

Hamah, a very ancient city of Syria, on the Orontes, 110 miles N. by E. of Damascus; the Hamath of the Bible. The town stands in the midst of gardens, though the streets are narrow and irregular, and the houses are built of sun-dried bricks and wood. The inhabitants manufacture coarse woolen mantles and yarn, and carry on considerable trade with the Bedouins. Four stones were discovered there in 1812 by Burckhardt, bearing inscriptions in an unknown language now believed to be Hittite. Pop about 45,000

Haman, a favorite of Ahasuerus, King of Persia. In order to revenge himself on Mordecai the Jew, he plotted the extermination of all the Jews in the kingdom; but in the providence of God he was thwarted by Esther, fell into disgrace with the king, and wrought his own ruin and the upbuilding of the Jews, B. C. about 485.

Hamburg, one of the free cities of Germany, a member of the German empire, and the greatest commercial port on the continent of Europe; about 80 miles from the North Sea, on the N. branch of the Elbe. The town of Altona adjoins it on the W. From the Elbe proceed canals which intersect the E. and lower part of the city in all directions, and it is also intersected by the Alster, which here forms two streams, the Binnenalster and Aussenalster. The quays and harbor accommodation are very extensive. After the destructive fire of 1842 whole streets were rebuilt in a magnificent and expensive style. Hamburg is of most importance on account of its great shipping trade and the business of banking, exchange, marine assurance, etc., carried on in connection with that. Its manufactures, though large, are less important, including shipbuilding, tobacco and cigar making, iron-founding, brewing, etc. The city owes its foundation to the Emperor Charlemagne, who (808-811) built a citadel and a church on the heights between the Elbe and the E. bank of the Alster, as a bulwark against the neighboring pagans. It became important as a commercial city in the 12th century, and in the 13th it combined with Lubeck in forming the Hanseatic League. In 1618 Hamburg was formally acknowledged a free city of the empire. During the Thirty Years' War its population and prosperity continued to increase on account of the immunity of its position, and in the following century it obtained a large share of the trade with North America. In 1810 it was formally incorporated in the French empire along with the N. W. part of Germany. In 1815 it joined the Germanic Confederation as a free city. In 1888 the city was included in the Zollverein or German Customs Union. Pop. (1900) 704,669.

Hameln, a town and formerly a fortress of Hanover, Prussia, on the Weser; 25 miles S. W. of Hanover. It presents a mediæval appearance, having many houses and buildings surviving from the Gothic and Renaissance periods of architecture. With this town is connected the well-known legend of the Piper (or Ratcatcher) of Hameln, who in 1284 freed the town from rats through the mystic charm of his pipe; but, when the people refused to pay him the promised reward, he exercised the power of his music on the children of the place, and drew them away into the heart of an adjoining hill, which opened to receive them, and through which he led them to Transylvania. The story is familiar from Browning's "Pied Piper of Hamelin."

Hamerling, Robert, an Austrian poet; born in Kirchberg-am-Walde, March 24, 1830. He gained influential patronage by poems published at 20, and became a lecturer at the University of Trieste. He produced poems, plays, and romances, which rank him among the first poets of "the new time," for thought, euphony, and technique. His greatest work is "Ahasuerus in Rome" (1866), a vivid epic of Nero's time and the dying paganism. He died in Gratz, July 13, 1889.

Hames, an old Lincolnshire, England, name for a flail, an instrument or threshing or beating grain from he ear by hand. The old saying, "to et the thames on fire," takes its origin rom this word, and has nothing whatever to do with the river Thames. It was first used with reference to a man who was locally known as a braggart, a man who did considerably more talking than working. Hence, "He'll never et t'hames on fire," meant he will never whirl the hames or flails fast nough to set them on fire.

Hamilcar, the name of several Carthaginian generals, of whom the most celebrated was Hamilcar, surnamed Barca (the lightning), the father of the great Hannibal. While quite a young man he was appointed o the command of the Carthaginian forces in Sicily, in the 18th year of he first Punic War, 247 B. C., when he Romans were masters of almost the whole island. For two years he defied all the efforts of the Romans o dislodge him; but the Carthaginian admiral, Hanno, having been totally defeated off the Ægates, 241 B. C., he reluctantly consented to evacuate Sicily. A revolt of the returned troops, joined by the native Africans, was successfully repressed by Hamilcar. He then entered on a series of campaigns in Spain, where he founded a new empire for Carthage. Here he passed nine years, and had brought the whole southern and eastern part of the country under Carthaginian rule when he was slain in battle against the Vettones, 229 B. C. His great design of making Spain a point of attack against Rome was ably carried out by his son Hannibal.

Hamilton, Family of, a family long connected with Scotland, though probably of English origin, the name being evidently territorial. William Alexander Louis Stephen Douglas Hamilton, 12th Duke of Hamilton in the peerage of Scotland, and 9th Duke of Brandon in the peerage of Great Britain, is premier peer of Scotland, and hereditary keeper of Holyrood House.

Hamilton, Alexander, an American statesman; born in Nevis, W. I., Jan. 11, 1757. In 1772 he was sent to Elizabethtown, N. J., to a grammar school, and in 1773 entered King's College (now Columbia University). When the Revolution broke out he was appointed (1776) captain of artillery, and in 1777 was made a member of Washington's staff, with the rank of lieutenant-colonel. In 1780 he married a daughter of General Schuyler. Being reproved by Washington for some slight matter, he resigned his commission, but the next year was in command of a battalion of infantry, engaging in the battle of Yorktown. The war being ended he studied law, and was sent to Congress in 1782 and again in 1787. He served in the convention that framed the National Constitution, where he led the sentiment in favor of a strong federal government as against a mere union of States. He wrote the greater number of papers collected in "The Federalist," that exerted great influence in bringing the States to accept the Constitution, and became the leader of the Federalist party. He was made the first Secretary of the Treasury under Washington. He was by this time ranked with Washington, Jefferson, and Franklin, as one of the four great Americans of his day. His position as the leader of the Federalist party brought him into conflict with Jefferson and Monroe, but he nevertheless supported Jefferson in the election contest between him and Burr in the House of Representatives, and partly by his influence Burr was defeated. He became inspector-general of the army in 1798. He was one of the founders of the Society of the Cincinnati, of which, in 1800, he became President-General. In 1804 he exerted his influence to defeat Aaron Burr, who was a candidate for governor of New York. Burr challenged Hamilton to a duel, in which he was mortally wounded by Burr's first fire, and died the following day, July 11, 1804.

Hamilton, Edward John, an American educator; born in Belfast, Ireland, Nov. 29, 1834; was graduated at Hanover College, Ind., in 1853, and at Princeton Theological Seminary in 1858; was chaplain of the 7th New Jersey Volunteers in the Civil War; Professor of Mental Philosophy at Hanover College in 1868–1879, and of Philosophy at Hamilton College, New York, in 1883–1891; accepted the latter chair in the State University of Washington in 1895.

Hamilton, Frank Hastings, an American surgeon; born in Wilmington, Vt., Sept. 10, 1813. He was graduated from the medical department of the University of Pennsylvania in 1833, and first practised in Auburn, N. Y. In 1844 he went to Buffalo, and, with Dr. Austin Flint and Dr. James Platt White, established the medical department of the University of Buffalo. He removed to Brooklyn in 1860, and was the first Professor of Surgery in the Long Island College Hospital. In 1861 he went to the war as surgeon of the 31st New York Volunteers and was made brigade surgeon after the battle of Bull Run, and surgeon of General Keyes's corps in 1862. A year later he was made medical inspector of the United States army. He was one of the founders of Bellevue Hospital Medical College in 1861, and was Professor of Surgery there till he resigned in 1875. Dr. Hamilton was associated with Drs. Agnew and Bliss in the care of President Garfield. He wrote extensively on the principles and practice of surgery, his works being regarded as standards on the subjects treated. He died in New York city, Aug. 11, 1886.

Hamilton, James, an English merchant; born in London, England, in 1769. Having been taught German at Hamburg in 1798 by an original method, he afterward exchanged mercantile pursuits for the teaching of languages, and taught with great success in the United States (from 1814) and in England (from 1823). He died in Dublin, Oct. 31, 1831.

Hamilton, James, an American statesman; born in 1786; was a member of Congress from South Carolina in 1822–1829; governor of South Carolina in 1830–1832; later settled in Texas; he advocated States rights and nullification. He was drowned in 1857.

Hamilton, John Church, an American biographer and historian, son of Alexander Hamilton; born in Philadelphia, Pa., Aug. 22, 1792. He died in Long Branch, N. J., July 25, 1882.

Hamilton, Patrick, usually considered as the first Scotch reformer, the second son of Sir Patrick Hamilton of Kincavel and Stanehouse, and of Catharine, daughter of the Duke of Albany, second son of James II.; born probably in Glasgow in 1504. While still a boy he had been appointed Abbot of Fearn, in Rosshire, but never went into residence, settling instead at St. Andrews in 1523. Here he began to announce his convictions in the principles of the Reformation, and was summoned in 1526 by Archbishop Beaton to stand his trial for heresy. He fled to Germany, where his education as a reformer was completed by an intimate acquaintance with Luther and Melanchthon. After six months' absense he returned to Scotland and began to preach the Gospel openly at Linlithgow, but was allured by Beaton to St. Andrews under pretense of a friendly conference, put on his trial, convicted of various heresies, and burned at the stake, March 1, 1527. His death did perhaps more to extend the principles of the Reformation in Scotland than even his life could have done.

Hamilton, Schuyler, an American soldier; born in 1822; a grandson of Alexander Hamilton; served in the Mexican and Civil Wars, and retired because of ill-health. He wrote "History of the National Flag of the United States." Died, March, 1903.

Hamilton, Sir William Rowan, an English mathematician and astronomer; born in Dublin, Ireland, Aug. 3–4, 1805. Before he had completed his 14th year he had made himself acquainted with 13 languages. His fame is chiefly founded on his invention of the calculus of quarternions, a new method in the higher mathematics. He died Sept. 2, 1865.

Hamilton, William Tiffany an American legislator; born in Hagerstown, Md., Sept. 8, 1820; was graduated at Jefferson College; was admitted to the bar in 1843; and three years later was elected by the Democrats to the House of Delegates. In 1849 he was elected to Congress and served three terms, but in 1855 was defeated. During the Civil War he took no active interest in political affairs, but after the adoption of the Constitution of 1867 ran for governor against Oden Bowie, and was beaten by a majority of one. In 1868 he succeeded William Pinckney Whyte in the United States Senate, and in 1875 was again a candidate for governor, but was defeated by John Lee Carroll. He ran once more in 1879, and was elected for the term 1880–1884. He died in 1888.

Hamilton College, an educational nonsectarian institution in Clinton, N. Y., founded in 1812.

Hamlet, the hero of Shakespeare's greatest tragedy, but whether a figure originally historical, mythological, or partly both, still remains uncertain.

Hamlin, Cyrus, an American missionary; born in Waterford, Me., Jan. 5, 1811; was graduated at Bowdoin College in 1834 and at Bangor Theological Seminary in 1837; went to Turkey in the following year. From 1860 to 1876 he was president of Robert College, which he had founded after a long conflict with the Turkish government. President Hamlin belonged to the group of American educators in the Levant whose influence did much in molding the character of modern Bulgarian leaders, and producing autonomy for Bulgaria. He returned to the United States and became a professor in the Theological Seminary in Bangor; was president of Middlebury College, Vt., in 1880–1885, when he removed to Lexington, Mass. He died Aug. 8, 1900.

Hamlin, Hannibal, an American statesman; born in Paris, Me., Aug. 27, 1809; was admitted to the bar in 1833; and began practice in Hampden; was elected to the United States Senate in 1848 to fill an unexpired term; reëlected in 1851 and again in 1857; resigned in 1861, after being elected Vice-President on the ticket with Abraham Lincoln; was again a United States Senator in 1869–1881, and then accepted the post of minister to Spain, but in the following year resigned and returned to the United States. He died in Bangor, Me., July 4, 1891.

Hamline University, a coeducational institution in St. Paul, Minn.; founded in 1854 under the auspices of the Methodist Episcopal Church.

Hammer, a tool used for applying the force of impact, either for the purpose of beating malleable materials into a required form, or for driving nails, wedges, etc.

Hammerfest, the extreme N. town of Europe; on the island of Kvalo, in the Norwegian province of Finmark. It is the rendezvous of the fishing fleets of the Kara sea and the waters along the Spitzbergen coasts. It imports coal, salt, hemp, flour, etc., in exchange for fish and fish-oil, with some reindeer hides, eider-down, and fox-skins. During the two summer months the sun is continually above the horizon. The winter is mild enough to allow of the fisheries being carried on.

Hammerhead, Shark, a genus of preying fishes, with heads projecting laterally up and down, somewhat resembling a double-headed hammer, with an eye at each end of the head. They abound in warm seas; and are very voracious and remarkably prolific.

Hammond, Edward Payson, an American evangelist; born in Ellington, Conn., Sept. 1, 1831; was graduated at Williams College in 1858; studied theology at Union Seminary, N. Y., and Free Church Seminary, Scotland; and was ordained by the Presbytery of New York in 1862. For years he was prominent as an evangelist in the United States and Great Britain.

Hammond, Mrs. Henrietta (Hardy), pseudonym Henri Dange, an American novelist; born in Virginia in 1854; died in 1883.

Hammond, William Alexander, an American surgeon; born in Annapolis, Md., Aug. 28, 1828; was graduated at the University of the City of New York in 1848; joined the United States army in 1849 as assistant surgeon; became surgeon-general in April, 1862; was found guilty of misdemeanor by court-martial and discharged from the army in 1864; practised in New York till 1878, when the proceedings of the court-martial were reviewed and he was restored to his former rank in the army and retired. He died in Washington, D. C., Jan. 5, 1900.

Hampden, John, a celebrated English statesman; born in London, England, in 1594. He was cousin-german by the mother's side to Oliver Cromwell. He entered Parliament in the beginning of Charles I.'s reign as member for Grampound, and continued to sit in the House of Commons three times in succession as member for Wendover, and finally as member for

Bucks. Though for some years a uniform opposer of the arbitrary practices in Church and state, it was not till 1636 that his resistance to Charles' demand for ship-money made him the argument of all tongues. Though the decision in the Court of Exchequer was given against him by seven voices to five, the victory, as far as regarded public opinion, was his. He took a prominent part in the great contest between the Crown and the Parliament, and was one of the five members whom the king, in 1642, so imprudently attempted, in person, to seize in the House of Commons. When the appeal was made to the sword, Hampden accepted the command of a regiment in the parliamentary army under the Earl of Essex, and was fatally wounded on Chalgrove Field, June 24, 1643.

Hampton, a town and county-seat of Elizabeth City co., Va., on the James river, and on the Chesapeake and Ohio railroad; 15 miles N. W. of Norfolk. It is the seat of the Hampton Normal and Agricultural Institute for Indians and Negroes, and a National Soldiers' Home.

Hampton Court Palace, long a royal residence, and now partially occupied by persons of good family in reduced circumstances, standing about a mile from the village of Hampton, England, in the midst of grounds that extend to the Thames. The original palace was erected by Cardinal Wolsey, and by him presented (1526) to Henry VIII., who enlarged it and formed around it a royal deer park. Here Edward VI. was born, his mother, Queen Jane Seymour, died, and Charles I. underwent a portion of his confinement.

Hampton, Wade, an American military officer; born in South Carolina in 1754; fought in the Revolutionary War under Sumter and Marion; was a member of Congress, 1795–1797 and 1803–1805. He was commissioned colonel in the United States army in 1808; promoted Brigadier-General in 1809, and Major-General in 1813; served in the War of 1812; and resigned his commission in April, 1814. He died in Columbia, S. C., Feb. 4, 1835.

Hampton, Wade, an American military officer; born in Charleston, S. C., March 28, 1818; grandson of Wade Hampton; was graduated at South Carolina College. At the outbreak of the Civil War he was believed to be one of the richest of Southern planters and owned the greatest number of slaves. He entered the Confederate army; raised and in part equipped the Hampton Legion, and was chosen its commandant; was wounded in the first action at Bull Run and also at Gettysburg. He was promoted Major-General May 11, 1864, and in August of the same year appointed commander-in-chief of the Confederate cavalry in Northern Virginia; was promoted Lieutenant-General in 1865. He greatly distinguished himself in several important actions, including the defeat of Sheridan's cavalry at Trevillian, Va.; the capture of about 2,500 head of cattle from General Grant's commissariat; etc. After the conclusion of peace he was a stanch advocate of conciliation between the North and South; was elected governor of South Carolina in 1876 and 1878; held a seat in the United States Senate in 1878–1890; and was appointed Commissioner of Railroads in 1893. He died April 11, 1902.

Hampton, Normal and Agricultural Institute, a school opened in 1868 in Hampton, Va., under the auspices of the American Missionary Association. The farm land, and the workshops where trades are taught, furnish occupation for the boys, while the girls are similarly instructed and employed in sewing and cooking classes, doing all the domestic duties of the school, and wherever possible learning trades side by side with the boys. In 1878, 15 Indians, who had been in charge of Capt. R. H. Pratt, at St. Augustine, Fla., as prisoners of war, were admitted as students, and from this beginning the Indian Department has increased, the Indian pupils being chiefly from the Sioux tribe, of whom two-thirds make a fair or good record.

Hampton Roads, a broad, deep arm of Chesapeake Bay at the mouth of James river, between Hampton and Norfolk, Va.; with Newport News, Old Point Comfort, Fort Monroe, Fort Wool, and Thimble Shoal Lighthouse at or near the entrance to the bay. In 1861 the Confederates seized the United States frigate "Merrimac" at Norfolk, covered her hull with railroad iron, and under the name of "The Virginia" sent her to attack the United States vessels lying at Hampton Roads in 1862. She rammed the frigate "Cumberland," which sank in 45 minutes; forced the "Congress" on the Shoal, where she was disabled, set on fire, and blown up, but was prevented by her draught from getting within striking distance of the "Minnesota." On the following morning she reappeared to attack the "Minnesota," but was suddenly confronted by the new Union iron-clad "Monitor," just arrived from New York, which fought her so effectively that she withdrew from the fight, steamed up the river, and refused to come out a second time to meet the "floating Yankee cheese-box."

Hampton-Sidney College, an institution of learning in Hampton-Sidney, Va.; founded in 1775 by the Presbyterian Church of Hanover and incorporated by the Legislature of Virginia in 1783. It is located on a tract of land given by Peter Johnson in 1773, and which has been increased by purchases and gifts, so that the college now owns about 250 acres.

Hananiah, a false prophet of Gibeon, who for his impious hardihood was overtaken with speedy death, according to the word of God (Jer. xxviii: 15–17).

Hanaford, Phebe Ann (Coffin), an American Universalist minister and author; born in Nantucket, Mass., May 6, 1829, being descended from the Coffins, of Nantucket. She was the first of her sex to become a member of the Universalist clergy. She has written a "Life of Abraham Lincoln," and other popular books and poems.

Hancock, John, an American Revolutionary patriot and president of Congress; born in Quincy, Mass., Jan. 12, 1737. In the inception of the Revolutionary struggle he was a leading spirit. The attempt to arrest Hancock and Samuel Adams led to the battle of Lexington. Hancock was a member of the Continental Congress from 1775 to 1780, also from 1785 to 1786, serving as president of the body from 1775 to 1777. The Declaration of Independence as first published bore only his name. He served as governor of Massachusetts 12 years. As an orator he was eloquent; as a presiding officer, dignified and impartial. He died in Quincy, Mass., Oct. 8, 1793.

Hancock Winfield Scott, an American military officer; born in Montgomery Square, Montgomery co., Pa., Feb. 14, 1824; was graduated at the United States Military Academy in 1844, and received his commission of 2d lieutenant; served during the Mexican war, was promoted for gallantry, and, having filled several subordinate posts, made assistant quartermaster-general; in 1861 was appointed a Brigadier-General of volunteers, and attached to the Army of the Potomac, accompanied General McClellan to the peninsula in 1862, and distinguished himself before Yorktown and Williamsburg; at the battle of Fredericksburg, in December, 1862, commanded a division of the 2d Corps, which suffered most severely, and for his services on this occasion received his commission as Major-General; took part in the battles of Chancellorsville and Gettysburg in 1863, and was severely wounded; in 1868, was appointed by President Johnson to the command of the S. W. military district, but his appointment was not indorsed by the Senate. In June, 1880, he became the unsuccessful Democratic nominee for President. He died in New York city, Feb. 9, 1886.

Hand, the part of the body which terminates the arm, consisting of the palm and fingers, connected with the arm at the wrist; the principal organ of touch and prehension. Properly speaking, the hand, with its highly specialized muscles, belongs to man alone. It cannot be considered, as in the ape, as a normal organ of locomotion. It is essentially the organ of touch and prehension. It molds itself to a body to ascertain its form; it comes to the aid of the eye in completing or rectifying its impressions.

Handball, a game of ball, played without any instrument for striking, the bare hand only being used. The game is a favorite with boys in the United States, and here are to be found the most expert players. Two or four men can play, one or two on a side. As far as is known the game of handball came to the United States about 1840.

Handcuffs, an instrument formed of two iron rings connected by a short chain or fixed on a hinge on the ends of a very short iron bar, which, being locked over the wrists of a malefactor, prevents him from using his hands.

Handel, properly **Haendel, George Frederick,** a great German composer; born in Halle, Prussia, Feb. 23, 1685. The passion which he early showed for music overcame his father's opposition to training him as a musician, and at the age of 7 he was placed under the tuition of Zachau, organist of Halle Cathedral. He brought out in 1704 his first work, an oratorio on the Passion, and his first opera, "Almira," followed in February by his "Nero," and subsequently by his "Florinda and Daphne." He was placed at the head of the newly-founded Royal Academy of Music, and accumulated a large fortune in spite of the heavy losses which he incurred by setting up an opera company in opposition to that supported by the leading nobility and the principal Italian singers. His last opera was performed in 1740. In 1742 the "Samson" appeared, in 1746 the "Judas Maccabæus," in 1748 the "Solomon," and in 1752 the "Jephthah." In 1752 he became blind, but did not lose his spirits, continuing to perform in public and even to compose. He died in London, April 13, 1759, and was buried in Westminster Abbey.

Hands, Laying on of. This rite, as a token of blessing, or the communication of spiritual gifts, or of something else which could not be literally delivered into the hands of another, has been in use from the earliest times. It occurs in Scripture as a patriarchal usage, appropriate and becoming perhaps rather than strictly religious, but later assumes more of the character of a formal rite. The rite is still retained by most Western Churches in the ceremony of ordination, and in the Anglican, Lutheran and Roman Catholic Churches both in confirmation and ordination.

Hang-chow-foo, the gate of the imperial canal, capital of the Chinese province of Chehkiang, and since the Japanese treaty of Shimonoseki (1895), a treaty port, at the mouth of the Tsien-tang in the Bay of Hangchau, 110 miles S. W. of Shanghai. The city, one of the great commercial, religious, and literary centers of China, has clean, well-paved streets and many magnificent temples, is a principal seat of the silk manufacture, of gold and silver work, and is noted for the beauty of its surroundings. From a remote period many spots in the environs have been the resort of pilgrims; and here several thousands of candidates assemble every year for the public examinations. It was formerly a naval port. Previous to the Taiping rebellion, the city had about 2,000,000 inhabitants; but it was then (1861) laid in ruins by the rebels, and now (1902) contains a population estimated at 700,000.

Hanging, a mode of execution. In cases of hanging, death seldom results from pure asphyxia, but is usually in some degree owing to apoplexy and injury to the spinal cord. In law, hanging is the prescribed penalty of wilful murder. In New York State and Ohio electrocution is substituted for death by hanging. In Rhode Island, Michigan and Wisconsin infliction of the death penalty is forbidden by law, except that in Rhode Island a life prisoner committing murder may be hanged. Hanging, drawing, and quartering were once the punishment of treason in England.

Hanging Gardens. The Hanging Gardens of Babylon were anciently reckoned among the wonders of the world. Their construction is variously ascribed to Queen Semiramis and to Nebuchadnezzar. Diodorus and Strabo have given descriptions of them. They are said to have formed a square, with an area of nearly four acres, and rose in terraces, supported on masonry arches, to a height of 75 feet. They were irrigated from a reservoir built at the top, to which water was lifted from the Euphrates by a screw.

Han-Kiang, a river in China, 1,300 miles long. Traffic is considerable and the region watered is in some places styled the "Garden of China."

Hankow ("Mouth of the Han"), a town and river-port in China, in the province of Hupeh, at the junction of the Han with the Yang-tse-kiang. The port was opened to foreign trade in 1862, and has become the chief emporium for the green-tea districts in the central provinces, which formerly sent their produce for export to Canton. Large steamers ascend to the town. In 1857 Hankow fell into the hands of the Taiping rebels, and was almost completely demolished by them. Pop. (1902) est. 800,000.

Hanna, Marcus Alonzo, an American politician and legislator; born in New Lisbon (now Lisbon), Columbiana co., O., Sept. 24, 1837. He was appointed to the United States Senate as a Republican by Governor Bushnell, March 5, 1897, to fill vacancy caused by the resignation of John Sherman, who resigned to accept the position of Secretary of State in President McKinley's cabinet; took his seat March 5, 1897. His term of service under the appointment expired in January, 1898, and he was elected for a second full term.

Hannibal, a Carthaginian general; son of Hamilcar Barca; born 247 B. C. At the age of 9 years his father, whom he was eager to accompany in the war against Spain, made him swear at the altar eternal hatred to the Romans. At the age of 22 he entered the army at the request of Hasdrubal. The soldiers perceived in him the spirit of Hamilcar, whom they had so highly esteemed; and in three campaigns his talents and his courage were so conspicuous that the army on the murder of Hasdrubal in 221 conferred on him the chief command by acclamation. Faithful to his early vow, the young general of 26 years soon manifested his determination to seize whatever opportunity might offer itself of commencing hostilities with Rome. This object was effected in 219 B. C. by laying siege to Saguntum, a town which had concluded an alliance with that city. In eight months Saguntum fell. The Romans alarmed by the fate of this city, sent ambassadors to Carthage to demand that Hannibal should be delivered up. The demand being refused, they declared war. Hannibal raised a powerful force and conceived the bold design of attacking the Romans in Italy.

After having provided for the security of Africa, and having left his brother Hasdrubal with an army in Spain he began his march with 90,000 foot soldiers, 40 elephants, and 12,000 horsemen, traversed Gaul in the depth of winter with incredible rapidity and reached the foot of the Alps. In nine days he crossed these mountains, probably by the pass leading over the Little St. Bernard. Of the troops with which he had set out, however, he had now only 20,000 foot soldiers and 6,000 horse remaining, and these were little more than skeletons. Hannibal repeatedly defeated the Romans, until Fabius Maximus adopted the plan of wearing him out by delay, and by avoiding a battle. Scipio now carried the war into Africa and made Carthage tremble; and Hannibal was recalled to defend his country. He reluctantly embarked his troops, and in 203 left the country which for 16 years he had held in spite of all the efforts of Rome. He landed at Leptis, and advanced to meet Scipio. The two generals had an interview and Hannibal proposed terms of peace, but in vain. Hannibal was defeated; 20,000 Carthaginians were left on the field and as many more taken prisoners. Hannibal fled to Adrumetum, rallied the fugitives, and in a few days collected a new army capable of checking the conqueror's progress. He then hastened to Carthage and declared to the senate that there was no safety but in peace and persuaded that body to accede to the terms offered.

Driven from country to country to escape the Romans, Hannibal ended the hopeless effort by swallowing poison which he carried in his ring. He died 183 B. C.

Hannington, James, an English clergyman, first Bishop of Eastern Equatorial Africa; born in Hurstpierpoint, Sussex, England, Sept. 3, 1847. He became a student of St. Mary Hall, Oxford, in 1868, and was ordained in 1873. June 24, 1884, he was consecrated Bishop of Eastern Equatorial Africa, and in the following January entered his new diocese, taking up his quarters at Frere Town, near Mombasa. In July, 1885, he started for the interior, the object of his journey being to reach the mission-station of Rubaga, in Uganda. But, after successfully surmounting the difficulties and dangers of the road through the land of the Masai, he was slain by order of Mwanga, King of Uganda, at a place not far from the right bank of the Nile, Oct. 29, 1885.

Hanno, a king or magistrate of Carthage who undertook a celebrated voyage of discovery along the W. coast of Africa. His expedition is said to have consisted of 60 ships; he founded numerous colonies or trading-stations, and proceeded as far S. as a point that has been variously identified with places between Cape Nun and the Bight of Benin. On his return to Carthage he inscribed an account of his voyage on a tablet, and placed it in the temple of Moloch.

Hanoi, the capital of Tonkin, and headquarters of the French administration on the left bank of the Songcoi or Red river, 80 miles in a direct line from the sea. The commercial city has a river front of 1½ mile; the citadel behind contains within its walls most of the official buildings. Embroidery and work in mother-of-pearl are the chief local industries. Pop. (1902) 150,000.

Hanover, formerly a kingdom in the N. W. of Germany, now a province of the kingdom of Prussia; bounded N. by the German Ocean and the duchies of Holstein and Lauenburg, from which it is separated by the Elbe; N. E. by Mecklenburg-Schwerin; E. by Prussia and Brunswick; S. by Prussian Saxony, Hesse-Cassel and Rhenish Prussia; and W. by Holland. Total area, 14,869 square miles; capital, Hanover. It is divided into six regierungsbzirke or districts, and, according to the census of Dec. 1, 1900, had a total population of 2,590,939.

Taken as a whole, Hanover is very thinly peopled and in proportion to its extent of surface has much fewer towns of importance than any other country in Germany. The inhabitants are generally of Saxon origin except in the W., where they have a common origin with the Dutch, and are of Frisian extraction. They are simple, temperate, industrious, and patient; submitting almost without a murmur to live on the humblest fare and give themselves little concern with political arrangements. The educated classes, of course, speak the ordinary written language, but the lower orders generally speak Low German. The great majority of them are Protestants of the Lutheran persuasion. The Roman Catholics do not exceed one-seventh of the whole, and are almost entirely confined to the districts of Hildesheim and Osnabruck.

The government, previous to its annexation to Prussia in 1866, was a hereditary monarchy in which the Salic law was in force. The greater part of the population seemed readily to acquiesce in the new order of things and most of the officials passed over into the service of the Prussian rulers, but the nobility, Lutheran clergy, etc., were less easily reconciled, or remained irreconcilable, and the present Duke of Cumberland still claims to be the rightful king. Hanover, however, has been more and more closely incorporated with the rest of the Prussian dominions, special laws having been passed with that object in view, one in particular putting an end to the preponderance of the land-owners in the provincial diet. The province sends 36 members to the Prussian chamber of deputies and 10 to the House of Lords (Herrenhaus).

Hanover, capital of the Prussian province of Hanover, situated in an extensive plain on the Leine, which here receives the Ihme and becomes navigable. The old town, irregularly built and with many antiquated buildings, is surrounded by the handsome new quarters which have arisen to the N., E., and S. E. There are fine promenades, and a large wood with beautiful walks, the Eilenriede, lies on the E. side of the city. The principal buildings are the Market Church, the Old Town House, the Theater, one of the finest in Germany, the Royal Palace, the Museum of Art and Science, the Royal Library, containing 175,000 volumes, the Central Railway Station, the Waterloo Monument, etc. About a mile to the N. W. is Schloss Herrenhausen, the favorite residence of George I., George II., and George V. Near the town is the colossal Welfenschloss, or palace of the Guelphs, now fitted up as a polytechnic school. Hanover is a manufacturing town of some importance, has cotton-spinning, machine works, iron foundries, chemical works, tobacco and cigar factories, etc. Hanover is first mentioned in 1163. It joined the Hanseatic League in 1481. It became the residence of the dukes of Brunswick-Luneburg, and capital of the principality in 1636. Pop. (1900) 234,980.

Hanover College, a coeducational institution in Hanover, Ind., founded in 1828 under the auspices of the Presbyterian Church.

Hanover, Treaty of, a treaty concluded between England, France, and Russia, in September, 1725, for the purpose of mutual assistance, as opposed to the alliance between Austria and Spain.

Hanseatic League, a celebrated confederacy formed in the 13th century between certain commercial towns, with the view at once of restraining the rapacity of kings and nobles, and clearing the Elbe, the German Ocean, and other places from the pirates and robbers by which they were then infested. Becoming powerful, the League concluded treaties with monarchs, raised troops, and made war, as if it had been an independent political power. At the time when the League flourished most, it consisted of 85 confederate towns. It gave a powerful impulse to commerce, and when in 1631 it in large measure fell to pieces, it left behind various free republics which continued for a long period of time.

Hansen, Peter Andreas, a German astronomer; born in Tondern, Schleswig, Dec. 8, 1795. In 1842 he was awarded the gold medal of the Royal Astronomical Society of Great Britain for his work on the perturbations of Jupiter and Saturn and on the Lunar Theory. In 1857 the British government published his "Lunar Tables" (in French), in which he had embodied the results of his now completed lunar theory. In 1860 the Royal Astronomical Society for the second time conferred upon him its gold medal, and the British government awarded him $5.000 in acknowledgment of his services to astronomy and navigation in the completion of this great work. He died in Gotha, Germany, March 28, 1874.

Hanslick, Eduard, a German musical critic; born in Prague, Sept. 11, 1825. He surpassed all contemporary workers in the field of musical criticism.

Hansteen, Christoph, a Norwegian astronomer; born in Christiania, Norway, Sept. 26, 1784. In 1814 he was appointed to the chair of mathematics in the university at Christiania, and there, in 1819, published his famous work, "Investigations into Terrestrial Magnetism." He was also Professor of Mathematics in the School of Artillery, superintendent of the triangulation of Norway, and reorganizer of the national system of weights and measures. He died in Christiania, Norway, April 11, 1873.

Hapgood, Isabella Florence, an American translator and writer; born in Boston, Mass., Nov. 21, 1851. She is well known as a translator of the works of Gogol, Hugo, and other great European writers.

Hapgood, Norman, an American journalist; born in Chicago, Ill., March 28, 1868. He was graduated at Harvard, the Harvard Law School, and studied literature in Europe. He published "Abraham Lincoln" (1899); "Daniel Webster" (1899); and other works.

Happy Hunting Grounds, the region to which the North American Indians believe they will go when they die; a place where there will be everlasting feasting and hunting.

Hapsburg, or **Habsburg** (properly Habichtsburg or Habsburg, the hawk's castle), a small place in the Swiss Canton of Aargau, on the right bank of the Aar. The castle was built about 1027 by Bishop Werner of Strassburg. Werner II., who died in 1096, is said to have been the first to assume the title of Count of Hapsburg. After the death, about 1232, of Rudolph II., the family divided into two branches, the founder of one of which was Albert IV. In 1273 Rudolph, son of Albert IV., was chosen Emperor of Germany, and from him descended the series of Austrian monarchs, all of the Hapsburg male line, down to Charles IV. inclusive. After that the dynasty, by the marriage of Maria Theresa to Francis Stephen of Lorraine, became the Hapsburg-Lorraine. Francis II., the third of this line, was the last of the so-called "Holy Roman Emperors," this old title being changed by him for that of Emperor of Austria. From the Emperor Rudolph was also descended a Spanish dynasty which began with the Emperor Charles V. (Charles I. of Spain), and terminated with Charles

II. in 1700. The castle of Hapsburg is still to be seen on the Wulpelsberg. In 1881 the Austrians proposed to purchase the castle of Hapsburg and give it as a wedding gift to the Crown-prince of Austria; but the people of Aargau refused to hear of the sale.

Haquebut, a firearm with a hooked butt fitted to the barrel in place of the straight butt or stock then in use. It was introduced into England about 1485. The haquebut may be considered as the first step in the long series of improvements in small arms which seem to have culminated in the modern rifles.

Harakiri, "Happy dispatch"; a method of suicide which members of the Japanese official classes were required to perform when the government considers them to be worthy of death. It is effected by making two gashes in the abdomen somewhat resembling a cross. Suicides sometimes adopt this painful method of death.

Harar, a city and territory of North-east Africa, under the dominion of Abyssinia, but practically self-governing. Pop. about 37,000, two-thirds females, composed of native Harari (nearly one-half), Gallas, Somali, and Abyssinians.

Harbor, a portion of a sea, a lake, or other large body of water, either landlocked or artificially protected so as to be a place of safety for vessels in stormy weather; a port or haven.

Harcourt, Sir William George Granville Venerables Vernon, an English lawyer and politician, son of the Rev. William Vernon Harcourt; born Oct. 14, 1827. In February, 1886, he was made chancellor of the exchequer; and after the resignation of Mr. Gladstone's ministry became a prominent leader of the Gladstonian section; in 1892 was reappointed chancellor of the exchequer, and held that place until 1895.

Hardee, William J., an American military officer; born in Savannah, Ga., Oct. 10, 1815; was graduated at the United States Military Academy in 1838; served with distinction in the Mexican War; in the Civil War entered the Confederate army with the rank of colonel; commanded a corps at Shiloh; promoted to lieutenant-general in 1862; commanded the left wing of the Confederate army at Perryville; defended Savannah against General Sherman in December, 1864. He died in Wytheville, Va., Nov. 6, 1873.

Hardenburg, Karl August, Prince von, a famous Prussian statesman; born in Essenroda, Hanover, May 31, 1750. In 1790 he entered the service of the king of Prussia, whose minister for foreign affairs he became in 1806. At the close of the wars of the first French empire he signed the treaty of peace at Paris in 1814. To Hardenberg Prussia is mainly indebted for the improvements in her army system, the abolition of serfdom, of the privileges of the nobles, and of a multitude of trade corporations, the encouragement of municipal institutions, and the reform of her educational system. He died in Genoa, Nov. 26, 1822.

Hardhack, the American popular name of a plant, common in pastures and low grounds, and celebrated for its astringent properties, which cause it to be used medicinally.

Hardicanute, a king of England, son of Canute the Great. On the death of Harold, his brother, in 1040, Hardicanute was elected king in his place. In the short space of two years he provoked the discontent of his subjects by the imposition of a very heavy danegeld. He died in Lambeth, near London, June 8, 1042.

Harding, Karl Ludwig, a German astronomer; born in Lauenburg in 1765. He discovered the asteroid Juno, the third of the small planets, in 1804, and compiled a set of star maps, which were for a long time the most accurate of any in existence. He died in Gottingen in 1834.

Hard Tack, a large, hard biscuit or cracker, made for the use of soldiers on the march. It takes 14 of them to make a pound. About 20 of these crackers are served to each man every day. When the soldiers were about to be shipped from Tampa to Cuba, during the war with Spain (1898), two factories in Atlanta furnished the government in two days with 80,000 pounds or 1,120,000 of hard tack.

Hardwar, or **Hari-dwara,** also called **Ganga-Dwara,** a city situated on the right bank of the Ganges, 39 miles N. E. of Saharunpur, Northwest Provinces. It attracts immense numbers of pilgrims at the end of March and the beginning of April. In ordinary years the attendance is about 100,000; but every 12th year peculiarly sacred rites take place, attended by perhaps 300,000 (formerly 2,000,000).

Hardy, Arthur Sherburne, an American novelist; born in Andover, Mass., Aug. 13, 1847. He was graduated from the United States Military Academy. His poetry consists mainly of lyrics and sonnets, while his novels are full of interest and charm. He was a skilled musician. In 1897 he was appointed minister to Persia.

Hardy, Thomas, an English novelist; born in Dorset, England, June 2, 1840. He was brought up as an architect, and practised some time at Dorchester, next prosecuted his studies in design at London, gaining professional distinction. His intention was now to become an art critic but the experiment of a not wholly unsuccessful work of fiction, shaped his destiny otherwise. He has written many popular books.

Hardy, Sir Thomas Duffus, an English palæographer; born in Jamaica, W. I., in 1804. He died in London, England, June 15, 1878.

Hardy, Fort, a Revolutionary fort now in ruins, at the confluence of the Fishkill creek and the Hudson river, near Saratoga, N. Y.

Hare, in zoölogy, various species of a rodent quadruped. It does not make a burrow like the rabbit, but lurks in a seat or form, which it varies according to the season, and in severe weather betakes itself to the woods. It is, properly speaking, a nocturnal animal and is very prolific.

Hare, John, an English actor; born in London, England, May 16, 1844. Traveled largely in the United States at the head of his own company, and was celebrated for his portrayal of emotional roles.

Hare, Robert, an American scientist; born in Philadelphia, Pa., Jan. 17, 1781; was Professor of Chemistry in the University of Pennsylvania in 1818–1847. His fame rests chiefly on the valuable discovery of the oxyhydrogen blowpipe to which he gave the name "hydrostatic blowpipe." His other inventions include the valve-cock or gallows-screw, the calorimeter and a process for denarcolizing laudanum. He died in Philadelphia, Pa., May 15, 1858.

Hareld, a genus of the duck family, having a short thick bill, and two feathers of the middle of the tail, in the males, greatly elongated. Two species are known; the best known, the long-tailed duck or hareld, inhabits the arctic regions both of the Old and New Worlds, its winter migrations in the United States extending as far S. as the Carolinas.

Harelip, usually a congenital malformation, and frequently hereditary, chiefly occurring in the upper lip, and having one fissure only; if there are two it is called a double harelip. Harelip, besides being a great deformity, is attended with defect of speech and often a cleft of the upper jaw and palate bones, converting the mouth and nose practically into one cavity. In ordinary cases a cure by means of operation is easily effected.

Harem, (Arabic, the prohibited), a word used by Mussulmans to signify the women's apartments in a household establishment, forbidden to every man except the husband and near relations. The women of the harem may consist simply of a wife and her attendants, or there may be several wives and an indefinite number of female slaves. The greatest harem is that of the Sultan of Turkey. It is only the richer Moslems who can maintain harems; the poorer classes have generally but one wife.

Hargraves, Edmund Hammond, the discoverer of the gold-fields of Australia; born in Gosport, England, in 1815. When 18 years of age he settled in Australia. Attracted to California in 1849, he there tried his luck as a gold-digger, and while so engaged was greatly struck by the similarity in the geological formation of California and Australia, and suspected that gold would be found in the latter. On his return home he proved the correctness of his surmise by discovering gold on the W. slopes of the Blue Hills in New South Wales in 1851. He was appointed commissioner of crown lands, and received from the government of New South

Wales a reward of $50,000. In 1855, one year after his return to England, he published "Australia and Its Goldfields."

Hargreaves, James, an English inventor; born probably in Blackburn, Lancashire, England. He invented the spinning-jenny, but his fellow-spinners, imbued with strong prejudices against machinery, broke into his house and destroyed his frame. He then removed to Nottingham (1767), where he erected a spinning mill. He died April 22, 1778.

Hargrove, Robert Kennon, an American clergyman; born in Pickens co., Ala., Sept. 17, 1829; ordained in the Methodist Episcopal Church, South; and held pastorates in Alabama; and was made bishop in 1882. He has been secretary of the College of Bishops since 1884, and president of the board of trustees of Vanderbilt University since 1889.

Haring, Georg Wilhelm Heinrich, pseudonym Wilibald Alexis, a German novelist; born in Breslau, June 23, 1797. He died in Arnstadt, Thuringia, Dec. 16, 1871.

Hari-Rud, or **Heri-Rud,** a river of Asia, which rises in the Hindu Kush about 150 miles W. from Kabul, pursues a W. course through Afghanistan for nearly 250 miles; then, bending suddenly to the N. it forms the boundary between Persia and Turkestan, and, after a further course of about 250 miles, loses itself in several arms in the Tekke Turkoman oasis.

Harlan, John Marshall, an American jurist; born Boyle co., Ky., June 1, 1833; was graduated at Centre College in 1850; became a lawyer; served in the Civil War; was attorney-general of Kentucky; a member of the Louisiana Investigation Commission of 1877, and in the same year was made associate justice of the Supreme Court of the United States. In 1892 he was an arbitrator on behalf of the United States before the Bering Sea tribunal.

Harland, Henry, pseudonym Sidney Luska, an Anglo-American novelist; born in St. Petersburg, Russia, in March 1861.

Harlaw, a place 18 miles N. W. of Aberdeen, the site of a battle fought July 24, 1411, between the Highlanders, led by Donald, Lord of the Isles, and the Lowlanders of Aberdeen, Mar, Garioch, Buchan, Angus, and Mearns, under Alexander Stewart, Earl of Mar. The battle was long and bloody, but the Highlanders were at last driven back, leaving more than 900 dead on the field. For long after "the red Harlaw" was a favorite theme of legend and song.

Harlem, the name applied to that portion of Manhattan borough, New York city, above Central Park. It includes an East and West side, the latter magnificently laid out with parks and broad avenues, and is being rapidly built up. Officially there is no such place as Harlem, although in the early days of the colony, "New Harlem" was a town.

Harlem River, a tidal channel which separates Manhattan Island from the mainland of the State of New York.

Harlequin, a character of the Italian comedy introduced on the stage of other countries. On the Italian stage he is a comic character, full of drolleries, tricks, and knaveries, and resembles the American clown.

Harmar, Josiah, an American soldier; born in 1753; served with Washington and Greene in the Revolutionary War; and was general-in-chief of the army in 1789 to 1792. He died in 1813.

Harmattan, a dry, hot wind blowing from the interior of Africa to the Atlantic, between Cape Verde and Cape Lopez, in December, January, and February. It hurts vegetation and prejudicially affects man, drying up the eyes, the mouth, etc., even peeling off the skin.

Harmonica, a musical instrument formed of a number of glasses which are tuned by filling them more or less with water, and are played by touching them with the dampened finger. Also a small wind instrument. A mouth-organ.

Harmonichord, an instrument played like a pianoforte, but sounding like a violin. The tone is produced by the pressure of the keys, which sets a revolving cylinder of wood, covered with leather and charged with resin, in action over the strings. It has also been called piano-violin, violin-piano, tetrachordon, etc.

Harmonists, a sect founded by two brothers, George and Frederick Rapp, who emigrated from Wurtemberg to the United States in 1803. Soon afterward they founded the town of Harmony in Pennsylvania. In 1815 they built New Harmony in Indiana. In 1825 the Harmonists removed to a new settlement, which they called Economy. They have community of goods and consider marriage a civil contract.

Harmonium, an instrument which bears some affinity to the organ, but, unlike that instrument, is made upon a principle technically termed the free vibrating reed. The free reed consists of a brass plate containing an oblong slit, having a thin elastic tongue fixed to one end in such a manner, and so exactly fitting into the slit, as to completely close it, but so that it will, upon the pressure of the wind on the free end, pass either inward or outward, without touching the end or sides.

Harmony, a union of sounds which individually appear different, but when heard together form a collective sound called a chord. It may also be explained as the melting or flowing together of several sounds into, as it were, one sound; in consequence of, or arising from, the consonant nature of their relative proportions to a fundamental sound. All musical compositions can be reduced to a fundamental harmony of successive chords, which, in their progression, are regulated by the rules of the theory of music.

Harmony, David B., an American naval officer; born in Easton, Pa., Sept. 3, 1832; entered the navy as a midshipman in 1847, rising through all the grades to that of rear-admiral in 1889. He served brilliantly in the Civil War, and was executive officer of the ironclad "Nahant" in the National operation in Charleston harbor in 1863; was retired in 1893.

Harney, William Selby, an American military officer; born in Haysboro, Tenn., Aug. 27, 1800; served as colonel in the Mexican War and was brevetted Brigadier-General for gallantry at Cerro Gordo. He was given command of the Department of Oregon, and in 1859 took possession of the island of San Juan, which was claimed by the English. For this he was recalled. He retired in 1863 and was brevetted Major-General in 1865. He died May 9, 1889.

Harney's Peak, the highest point of the Black Hills, South Dakota, named in honor of Gen. W. S. Harney. It is about 7,400 feet high.

Haro, or **San Juan Archipelago,** a cluster of islets owned by the United States, lying off the S. end of Vancouver Island.

Harold II., King of England; born about 1022, was the second son of Godwin, Earl of Kent. On the death of Edward the Confessor, Jan. 5, 1066, he stepped without opposition into the vacant throne, without attending to the claim of Edgar Atheling, or the asserted bequest of Edward in favor of the Duke of Normandy. The latter immediately called upon him to resign the crown, and upon his refusal prepared for invasion. He also instigated Harold's brother, Tostig, to infest the N. coasts of England in conjunction with the King of Norway. The united fleet of these chiefs sailed up the Humber and landed a numerous body of men; but at Stamford Bridge, in Yorkshire, were totally routed by Harold, whose brother Tostig fell in the battle. Immediately after he heard of the landing of the Duke of Normany at Pevensey, in Sussex. Hastening thither with all the troops he could muster, a general engagement ensued at Senlac near Hastings, Oct. 14, 1066, in which Harold was slain, and the crown of England passed to William.

Harold, I., surnamed Haarager (Fair-haired), the first king of all Norway. In his old age Harold divided his territories among his sons, and died at Throndhjem, which he had made his capital, in 930, leaving the supreme power to his son Eric, surnamed Bloody-Axe.

Harold III., surnamed Haardraade, or Hardrada (stern in council), a king of Norway. He was one of the most famous of the old Viking chiefs, and a descendant of Harold I. About 1045 his nephew, Magnus (the son of St. Olaf), agreed to divide the supreme power with him, in exchange for a share of his treasures. The death of Magnus in 1047 left Harold sole King of Norway. In 1066 he landed in England, to aid Tostig against his brother Harold, King of England, but was slain in battle at Stamford Bridge, where also the flower of his warriors fell.

Haroun, surnamed Al-Raschid (more properly Harun er Rashid the orthodox), the most renowned of the Abbaside caliphs; born in 763. He succeeded his elder brother, El Hadi, in the caliphate, in the year 786. He owed his peaceful accession to the sagacity of the Barmecide Yahya, whom he at once made his grand vizier. To him and his four sons he left the entire administration of his extensive kingdom; and the general prosperity of the country proved that his confidence was not misplaced. Meantime Haroun gave himself up to the pleasures of life, and his own taste and hospitality quickly made his court at Bagdad a brilliant center of all the wit, learning, and art of the Moslem world. Himself an accomplished scholar and poet, he gathered round him the best scholars, poets, and musicians of his age, and heaped rewards upon them with lavish prodigality. Toward the end of his reign a strange and deeply rooted hatred toward the Barmecides filled his mind, and in 803 he caused the vizier, his four sons, and all their descendants, save one, to be executed. But retribution quickly followed; treason and rebellion, no longer dreading the far-reaching arm of the able vizier, showed themselves in every corner of the empire; and, when it was too late, Haroun repented bitterly his ferocious cruelty. To quell a formidable rising in Khorassan, in the N. E. of the empire, Haroun marched in person against the rebels, but an attack of apoplexy obliged him to remain behind, in Tus, where he soon afterward died, in the month of March, 809. Haroun the Magnificent is the hero of many of the stories in the "Arabian Nights," which have thrown a false halo round his memory; for with all his enlightenment, there was room in his heart for the most merciless and bloodthirsty ferocity and injustice.

Harp, a stringed instrument of great antiquity. In the Bible, Jubal, a descendant of Cain, is mentioned as its inventor. It was in use among the Egyptians, Assyrians, Hebrews, Greeks, Irish, Welsh, and other nations.

Harper, William Rainey, an American educator; born in New Concord, O., July 26, 1856; was graduated at Muskingum College in 1870; Professor of Hebrew at the Baptist Union Theological Seminary, Chicago, in 1879–1886; of Semitic Languages at Yale College in 1886–1891; was then chosen president of the University of Chicago. He has been remarkably successful in promoting the interests of that institution, which has been greatly befriended by John D. Rockefeller.

Harper's Ferry, a town in Jefferson Co., W. Va.; at the confluence of the Shenandoah and Potomac rivers, and on the Baltimore and Ohio railroads; 81 miles W. of Baltimore, Md. The place has considerable historical interest. It was the site of a United States government foundry, arsenal and armory, and the scene of John Brown's raid in Virginia in 1859. The government buildings were burned in 1861, to prevent their falling into the hands of the Confederates. In 1862 a Union army under Gen. D. H. Miles surrendered to Stonewall Jackson at this point. It is the seat of Storer College, and has considerable local trade. Pop. (1890) 958; (1900) 896.

Harpoon, a barbed javelin used to pierce and fasten to whales. It has a broad, flat, sharp head, and a shank about two feet long, furnishing a socket for the shaft. A line about 70 fathoms long is attached to the harpoon, and runs out rapidly as the struck fish dives below the surface.

Harpseal, a Greenland seal. The resemblance to a harp is in two large brown, oblique bands meeting near the shoulders, and then running separately along the sides and up the hind legs, where they become brighter, till they finally disappear in the white of the under parts. It is found in the Arctic Ocean, in Greenland, Newfoundland, Iceland, the N. and N. E. of Asia.

Harpsichord, a stringed instrument with a key-board, similar in form to a modern grand pianoforte, by which it has been superseded.

Harpy, a fabulous creature in Greek mythology, considered as a minister of the vengeance of the gods. They are described as hideous monsters with wings, of fierce and loathsome aspect, with their faces pale with hunger, living in an atmosphere of filth and stench, and comtaminating everything that they approached. A harpy in heraldry is represented as a vulture with the head and breast of a woman.

The name harpy is also applied to a raptorial bird, an inhabitant of the great tropical forests, where it preys upon all quadrupeds except the most powerful, chiefly, however, on monkeys and sloths; even children are said to have been carried off by it. It inhabits the tropical regions of South America, from Bolivia and Paraguay to Mexico.

Harraden, Beatrice, an English novelist, daughter of an East India agent in London; born about 1864. After private schooling and a season in Germany she took her degree at London University at 21, showing marked excellence in languages. Her first novel, "Ships that Pass in the Night," was instantly successful.

Harrier, a genus of hawks of slender build, with a somewhat weak, unnotched bill, with soft plumage and a slightly owl-like ruff on the face, with long legs and wings, and a characteristic gliding flight along the ground. They live in the open country, are fond of marshy districts, and dexterously catch frogs, birds, and small mammals. The marsh harrier is abundant in many parts of North America.

Harrington, Mark Walrod, an American astronomer; born in Sycamore, Ill., Aug. 18, 1848. He acquired his education at Evanston, Ill., and the University of Michigan, graduating from the latter in 1868. From 1879 to 1891 he was Professor of Astronomy and Director of the Observatory at the University of Michigan. In 1884 he founded the "American Meteorological Journal" and was its managing editor until 1892. In 1891 he was appointed Chief of the Weather Bureau at Washington, D. C., which post he held till 1895, when he was made vice-president of the International Meteorological Conference at Munich.

Harris, Amanda Bartlett, an American writer; born in Warner, N. H., Aug. 15, 1824. Besides numerous contributions to periodicals, she has published many pleasing books.

Harris, David Bullock, an American military officer; born in Virginia in 1814; was graduated at the United States Military Academy in 1833. In 1861 he entered the Confederate army, attaining the rank of general. He died in 1864.

Harris, Isham Green, an American legislator; born in Tullahoma, Tenn., Feb. 10, 1818. He was a member of Congress in 1849–1853, and governor of Tennessee in 1857–1863. During the latter part of the Civil War he served as a staff officer in the Confederate army. He subsequently practised law in Memphis, and in 1877 was elected United States Senator, and reëlected in 1883, 1889, 1895. He was unanimously elected president pro tem. of the Senate in 1893. He died July 8, 1897.

Harris, Joel Chandler, an American journalist and story writer; born in Eatonton, Ga., Dec. 8, 1848. He had a thorough familiarity with the negro of the post-bellum period, and while editing an Atlanta paper he produced for it the series of "Uncle Remus" sketches and songs which immediately made him known. In a more serious vein is his biography of the lamented Henry W. Grady, a work of genuine power.

Harris, Mrs. Miriam (Coles), an American novelist; born in Dosoris, L. I., in 1834.

Harris, Robert, a Canadian artist; born in Wales in 1849. His best known work is "Fathers of Confederation," now in the Parliament House, Ottawa.

Harris, Thomas Lake, religious reformer; born in Fenny Stratford, England, May 15, 1823. He accompanied his father to the United States and became a Universalist pastor, and founded an "Independent Christian Society," when in 1850 he was drawn into the spiritualistic movement. He lectured in Great Britain in 1858, and on his return to the United States reorganized his society as the "Brotherhood of the New Life." Latterly he settled in California.

Harris, William Logan, an American clergyman; born in Ohio in 1817; became a Methodist clergyman in early life; and was made bishop in 1872. He died in 1887.

Harris, William Torrey, an American educator; born in North Killingly, Conn., Sept. 10, 1835; studied at Yale College; superintendent of St. Louis public schools in 1867–1880; appointed United States Commissioner of Education, Sept. 13, 1889.

Harrisburg, a city, capital of the State of Pennsylvania, and county-seat of Dauphin co.; on the Susquehanna river, 160 miles W. of Philadelphia. It is a railroad center with direct connections with the coal and iron resources of the State, and is an extensive lumber depot. The State capitol buildings are located in the midst of a beautiful park of 10 acres on a gentle rise of ground. They are plain brick edifices. Pop. (1900) 50,167.

Harrison, Benjamin, an American patriot; born in Berkeley, Va., about 1740. He was elected to the House of Burgesses soon after attaining his majority. In 1773 he was chosen a member of the committee which united the colonies against Great Britain. Shortly afterward he was elected to Congress and five times reëlected. On July 4, 1776, he reported, as chairman of the committee of the whole House, the Declaration of Independence, of which he was one of the signers. He opposed the ratification of the Federal Constitution, but, on its adoption, supported the National government. He died in April, 1791.

Harrison, Benjamin, an American statesman, 23d President of the United States; born in North Bend, O., Aug. 20, 1833. He was a great-grandson of Benjamin Harrison, signer of the Declaration of Independence, and grandson of William Henry Harrison, 9th President of the United States. He was graduated at Miami University; studied law in Cincinnati; removed to Indianapolis, Ind., in 1854, and laid the foundation of a fine legal practice; entered the Union army in 1862, serving with conspicuous gallantry in the Atlanta campaign, finally returning to civil life at the close of the war with the rank of brevet Brigadier-General; was the Republican candidate for governor of Indiana in 1876, but was defeated; was elected to the United States Senate in 1881, where he added to his reputation as a sound thinker and a polished debater; at the Republican Convention held in Chicago, June, 1888, he was nominated for the presidency of the United States; elected in the ensuing November; and inaugurated March 4, 1889. His administration was quiet, successful and measurably popular. It was marked by the amicable settlement of the trouble with Chile and by the passage of the McKinley Tariff Bill. In 1892 he received again the nomination in the National Republican Convention, but by this time the able and persistent attacks of the Democracy on the high tariff policy led to a general revulsion against it, and he was defeated at the election by Cleveland. He thereupon pursued a private law practice, occasionally giving public addresses. He died in Indianapolis, Ind., March 13, 1901.

Harrison, Mrs. Burton (Constance Cary), an American novelist and miscellaneous writer; born in Vaucluse, Va., April 25, 1846.

Harrison, James Albert, an American educator; born in Pass Christian, Miss., Aug. 21, 1848; was graduated at the University of Pennsylvania in 1868; Professor of English and Romance Languages at the University of Virginia since 1895.

Harrison, John, an English inventor; born in Foulby, Yorkshire, England, in 1693. In 1726 he constructed a timekeeper provided with compensating apparatus for correcting errors due to variations of climate. After a long period of persevering labor Harrison made a chronometer which, in a voyage to Jamaica in 1761–1762, was found to determine the longitude within 18 miles. He died in London, March 24, 1776.

Harrison, Thomas Alexander, an American landscape painter; born in Philadelphia, Jan. 17, 1853. He was awarded the gold medal of honor by the Pennsylvania Academy of Fine Arts in 1894 and in 1898 became an associate National Academician.

Harrison, William Henry, an American statesman, 9th President of the United States; born in Berkeley, Va., Feb. 9, 1773. He served in the Indian War on General Wayne's staff, 1791–1792, and in 1797 was appointed captain, in command of Fort Washington, on the present site of Cincinnati, O. On the conclusion of the war he became Secretary of the Northwest Territory (1798), resigning the next year to enter Congress as delegate from that Territory. In 1801 he was appointed governor of Indian Territory, and made superintendent of Indian Affairs. He made important treaties with the Indians, and won considerable fame by a victory over a force of Indians, in the battle of Tippecanoe, in 1811. In 1812 he was intrusted with full military command on the Northwest frontier, with the rank of Brigadier-General, and the following year was promoted to Major-General. During this year he distinguished himself by his defense of Fort Meigs and in the battle of the Thames. After the War of 1812 he was sent to Congress, 1816; to the Ohio State Senate, 1819; to the United States Senate, 1825; and as United States minister to Colombia, 1828. After a retirement of 12 years he was nominated for the presidency by the Whig party, against Van Buren, in the famous "log-cabin" and "hard cider" campaign. Harrison was said by his opponents to live in a log cabin and to be given to the habit of drinking hard cider. These reproaches were turned into watchwords by the Whigs, and aroused unprecedented enthusiasm. He died April 4, 1841, just a month after his inauguration, leaving the presidency to the Vice-President, John Tyler.

Harsha, David Addison, an American religious writer and biographer; born in South Argyle, N. Y., in 1827; died in 1895.

Hart, Albert Bushnell, an American educator; born in Clarksville, Pa., July 1, 1854; became Professor of History at Harvard University. He edited "American History Told by Contemporaries," and, since 1895, the "American Historical Review."

Hart, Charles Henry, an American art critic and author; born in Philadelphia in 1847.

Hartbeest, the commonest of the larger antelopes in Southern Africa. It is of a gray-brown color. It lives in large herds, and is hunted for its flesh, which resembles that of the ox. It can be domesticated.

Harte, Francis Bret, an American novelist and poet; born in Albany, N. Y., Aug. 25, 1839. He went to California in 1854, and figured as a coal dealer, a teacher, and a typesetter on the "Golden Era," in which appeared some of his earliest literary efforts. He next became editor of the "Californian," and in 1864 secretary to the United States Mint at San Francisco. In 1868 he became editor of the "Overland Monthly," in which appeared, in 1869, the humorous poem of "The Heathen Chinee." In 1878 he became United States consul at Crefeld, whence he was transferred to Glasgow in 1880, and remained there till 1885. Among his best known works are "The Luck of Roaring Camp," and "The Outcasts of Poker Flat." During the last 24 years of his life Mr. Harte resided abroad. He died near Aldershot, England, May 5, 1902.

Hartford, a city, capital of the State of Connecticut, port of entry and county-seat of Hartford co.; on the Connecticut river, 36 miles N. E. of New Haven. It is an important commercial and manufacturing city, and is noted for its many insurance companies. Area, 17 square miles.

The new State House is an imposing structure completed in 1880, at a cost of $3,100,000, having its main approach by way of a bridge over Park river, on which bridge a soldiers' memorial arch has been built. The old State House, now used as a city hall and the rooms of the Hartford Historical Society, contain many interesting relics and antiquities. The grounds of the new State House and Bushnell Park comprise together a park of 46 acres. The city's manufactures are varied and extensive.

The first settlement was made by the Dutch in 1623. The Dutch were banished from Connecticut in 1654, and in 1687 an attempt was made by the English Governor Andros to seize the Charter, which was thwarted by hiding it in the Charter Oak. Pop. (1900) 79,850.

Hartford Convention, an assembly of leading New England Federalists which met in Hartford, Conn., in December, 1814, to oppose further prosecution of the war (1812–1814) with England. Among other things which the convention demanded were that the war with England should stop; and that custom house duties collected in New England should be paid to the States within whose borders they were collected, and not to the United States. It declared for changes in the Constitution as follows: Abrogation of the right of Southern States to representation for three-fifths of their slaves; requirement of a two-thirds vote of both Houses for the admission of new States or the prohibition of commercial intercourse or to declare war or to authorize hostilities except in cases of invasion; embargoes to be limited to 60 days; foreigners to be disqualified from all civil offices under the United States; presidents to be ineligible for a second term, and no two successive presidents to be from the same State. Massachusetts and Connecticut sent commissioners to Washington to attempt to carry out the suggestions of the report, but the war had in the meantime ended and the commissioners were ignored. The convention did not meet again; but the odium attaching to it was so great that its president placed a copy of the proceedings in the hands of the Massachusetts Secretary of State in order thus to disprove charges of treason.

Hartington, Spencer Compton Cavendish, Marquis of, born in 1833, son of the 7th Duke of Devonshire; was educated at Trinity College, Cambridge. In 1863 he became a lord of the admiralty, and was war secretary from 1863 to 1866. In 1871 he was appointed chief secretary for Ireland. He went out with the Gladstone ministry in 1874, and soon after he became the leader of the Liberal party. On the fall of the Conservative government in 1880 he became secretary for India under Gladstone, and was transferred to the war office in 1882. He strenuously opposed Gladstone's Home Rule Scheme of 1886. In 1891 he succeeded his father as Duke of Devonshire. Oct. 5, 1903, a letter was published in which the Duke of Devonshire resigned from the British Cabinet as President of the Council, his resignation carrying with it also withdrawal from the conservative leadership in the House of Lords. In his letter the Duke gave as a reason that he had not found, in a recent speech by Premier Balfour "a definite statement of adherence to the principles of free trade as the ordinary basis of our fiscal and commercial system, and an equally definite repudiation of the principle of protection in the interest of our national industries."

Hartley, David, an English philosopher; born Aug. 30, 1705. His work on the mind, entitled "Observations on Man" (1749), on which his fame rests, was begun when he was about 25, and occupied his thoughts for 16 years. He finally chose the profession of medicine, in which he attained considerable eminence. He died in Bath, Aug. 25, 1757.

Hartmann, Eduard von, a German philosopher; born in Berlin, Feb. 23, 1842. At 22 he chose for his life vocation "thinking," or philosophy, and on his retirement from the Prussian military service (1865), devoted himself wholly for some years to writing his great work, "The Philosophy of the Unconscious" (1868), he has since produced many other works on philosophy, society, religion, politics, literature, art, etc.

Hartranft, Chester David, an American educator; born in Frederick township, Pa., Oct. 15, 1839; was graduated at the University of Pennsylvania in 1861 and at the New Brunswick Theological Seminary in 1864; was Professor of Ecclesiastical History at the Hartford Theological Seminary in 1879–1888; and then was elected its president. He is a writer on theological subjects.

Hartranft, John Frederick, an American military officer; born in New Hanover, Pa., Dec. 16, 1830. He was graduated at Union College, Schenectady, in 1853, and in 1860 was admitted to the bar. At the outbreak of the Civil War he proffered his services to Governor Curtin, and remained in active service till the close of the war. In March, 1865, he commanded a division of the 9th Corps in their assault on Fort Steadman, and was brevetted Major-General, executing the sentences of the military commission which tried Mrs. Surratt and others for the murder of Abraham Lincoln. From 1872 to 1878 he was governor of Pennsylvania. He died in Norristown, Pa., Oct. 17, 1889.

Hartshorn, the horn of the common stag, or hart, from which substances deemed of high medical value were formerly prepared by distillation, such as spirits of hartshorn, oil of hartshorn, and volatile salt of hartshorn. The active ingredient of these was ammonia, which is now obtained from gas-liquor and other sources. Hartshorn also yielded a nutritive jelly.

Harvard, John, an American clergyman; born in England in 1607. He was graduated at Emmanuel College, Cambridge, England, and came to the United States in 1637. He was made a citizen of Massachusetts and given a tract of land in Charlestown, where he began preaching as a Congregational minister, and in his will bequeathed $3,750 and 320 volumes from his library for the establishment of a college. A granite monument was erected over his remains in Charlestown in 1828, and a memorial statue on the Delta at Harvard University was unveiled in 1884.

Harvard Observatory, in Cambridge, Mass., founded in 1843. It is the richest endowed and in some respects (especially photographically) the best equipped observatory in the world. It has published 17 quarto volumes of its "Annals."

Harvard University, the oldest institution of learning in the United States, founded in Cambridge, Mass., 3 miles from Boston, in 1636. At a meeting of the General Court of the Colony of Massachusetts Bay convened on Sept. 8, only six years after its first settlement, it was voted to give £400 toward a "schoale or colledge," and the ensuing year 12 of the most eminent men of the colony, including John Cotton and John Winthrop, were authorized "to take order for a college at Newtown." The name of Cambridge was soon afterward adopted in recognition of the English University, where many of the colonists had been educated. In 1638 John Harvard, a young non-conformist minister, died in Charlestown, leaving to the college £750 and his library of over 300 volumes. The institution was immediately opened, and was named after its first benefactor. Its first president was the Rev. Henry Dunster.

Between 1636 and 1782 Harvard College conferred only the degrees of Bachelor and Master of Arts, but in 1780 the term University was applied to it in the constitution of Massachusetts. In 1782 and 1783 three professorships of medicine were established and the first degree of Bachelor in Medicine was conferred in 1788. In 1810 the lectures in medicine were transferred to Boston, and there the first medical college was built in 1815. The Law School was established in 1817, and has the distinction of being the earliest school in the country connected with a university and authorized to confer degrees in law. The Divinity School was a gradual outgrowth of the college; the Hollis professorship of Divinity was established in 1721, but the divinity faculty was not formally organized till 1819. It is undenominational.

The Scientific School instituted in 1847, and at first announced as an advanced school in science and literature, was named after Abbott Lawrence, who presented it with $50,000. It confers the degree of Bachelor of Science. The Graduate School, established in 1872, and placed in 1890, together with the Lawrence Scientific School, under the Faculty of Arts and Sciences, confers also the degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science. The Dental School, situated in Boston, was instituted in 1867, its course being three years; it gives the degree of Doctor of Dental Medicine. The School of Veterinary Medicine was established in 1882, has a free clinic, a hospital, a pharmacy and shoeing forge, and its course of three years leads to the degree of D. V. M. The Arnold Arboretum was founded in 1872 as the outcome of the will of James Arnold, and is practically a public park of great beauty and an experiment station in Arboriculture, Dendrology and Forestry. The school of Agriculture and Horticulture was established in 1870 in accordance with the will of Benjamin Bussey, and is known as the Bussey Institution. It confers the degree of Bachelor of Agricultural Science. The Astronomical Observatory was established in 1843 by means of a public subscription; the Sears Tier was built in 1846, and two years later Edward Bromfield Phillips bequeathed to the university the sum of $100,000 for the observatory; this early bequest has since been supplemented by many others, so that the observatory now has an endowment of $850,000. Besides the various department libraries, more than a dozen in number, there is a University Library kept in Gore Hall, numbering 379,000 volumes, and as many maps and pamphlets. In 1764 the library was destroyed by fire, the only works saved being an Oriental collection, bequeathed by Dr. Lightfoot, and the Greek and Roman classics presented by Bishop Berkley, but now the total number of books amounts to nearly 550,000.

The university buildings number more than 60, including the great Memorial Hall, built in honor of the alumni who perished in the Civil War. The number of members of the corporation in 1900 was 7; of overseers, 32; of professors, 94; associate professors, 5; assistant professors, 42; lecturers and other instructors, 307; making a total of 448 teachers; 1,902 students in the college; 495 in the Scientific School; 320 in the Graduate School; 27 in the Divinity School; 613 in the Law School; 558 in the Medical School; 131 in the Dental School; 24 in the Veterinary School; and 27 in the Bussey Institution, and a membership of 856 in the Summer School of 1899, making a total of 4,947 students connected with the university. Fellowships, scholarships and beneficiaries with stipends, with an aggregate income of $82,000, are used as rewards to deserving students.

Harvest Bug, the resemblance to a bug is in its depressed, oval body, its color, and its blood-sucking propensities. It is not, however, a genuine bug; it is a species of the order Acarina. In certain years, in autumn, it abounds on grass and other plants. Climbing thence it gets on the person, inserts its sucker into the body, and gorges itself with blood.

Harvest Fly, a name given to a homopterous insect, which appears in the United States in incredible numbers once in 17 years.

Harvest Fly, a name given to a homopterous insect, which appears in the United States in incredible numbers once in 17 years.

Harvest Moon, the moon near its full at the time of harvest, or about the autumnal equinox, when it rises at nearly the same hour for several days.

Harvest Mouse, a mouse so small that White, of Selborne, who first discriminated it, proposed to call it M. minimus, and Pallas M. minutus. The body is two and a quarter inches long, the tail two inches.

Harvest Spider, the shepherd spider, abounding in autumn, possessing legs of unusual length. When irritated it has the peculiar property of throwing off one or more of its legs.

Harvey, Sir George, a Scotch painter; born near Stirling in February, 1806. In 1826, when the Royal Scottish Academy was instituted, he was elected an Associate, though only in his 20th year; he became a full Academician in 1829, president in 1864, and was knighted in 1867. In his latter years Harvey devoted much time to landscape-painting. He died Jan. 22, 1876.

Harvey, Moses, a Canadian historian; born in Armagh, Ireland, March 25, 1820. In 1873 he discovered the devilfish, or at least brought public attention to a monster of the deep up to that time supposed to be mythical. The devilfish was named Megalotuthis Harveyi. He died in St. John's, N. F., Sept. 3, 1901.

Harvey, William, an English physician; born in Folkestone, Kent., April 1, 1578. He took his degree in arts at Caius College, Cambridge, in 1597 and after five years' study at Padua he obtained his diploma as doctor of medicine in 1062. He returned to England in the same year; and after receiving his doctor's degree from his original university, Cambridge, settled in London as a physician. In 1615 he was appointed Lumleian Lecturer at the College of Physicians — an office then held for life; and it is generally supposed that in his first course of lectures (in the spring of 1616) he expounded those original and complete views of the circulation of the blood with which his name is indelibly associated. It was not till the year 1628 that he gave his views to the world at large, in his celebrated treatise entitled, "Anatomical Study of the Movement of the Heart and the Blood." He was appointed successively physician to James I. and Charles I. To appreciate the importance of Harvey's discovery and the nature of the objections that would be urged against it, it is sufficient to state that Harvey's first step was to prove that the arteries contained not air but blood. The whole course of the circulation could not be demonstrated, as Harvey had no idea of a system of capillaries uniting arteries and veins. In 1654 he was elected president of the College of Physicians, but he declined the office on account of his age and infirmities. In July, 1656, he resigned his Lumleian lectureship, which he had held for more than 40 years; and in taking leave of the college presented to it his little patrimonial estate at Burmarsh, in Kent. He did not long survive, but, worn out by repeated attacks of gout, died at London, June 3, 1657.

Harwood, Andrew Allen, an American naval officer; born in 1802; entered the navy as a midshipman and rose through the grades to that of rear-admiral, serving in the Civil War. He was an authority on naval courts-martial. He died in 1884.

Harz Mountains, a mountain range in Germany, extending between the rivers Weser and Elbe, S. of Brunswick, with a length of 57 miles, a breadth of 20, and a superficial area of 784 square miles. The Harz Mountains are the scenes of many of the weird legendary tales of German literature.

Hasdrubal, the name of several Carthaginian generals, of whom the most famous was the son-in-law of Hamilcar Barca. In 237 B. C. he accompanied Hamilcar into Spain, and gave that general most effective aid in the work of building up a Carthaginian dominion in the Peninsula. In the eighth year of his command, 221 B. C. he was assassinated by a Celtic slave. Another Hasdrubal was the son of Hamilcar Barca and the brother of Hannibal. He defeated Cneius Scipio in Spain in 212 B. C., and in 208 marched through Gaul to join his brother Hannibal in Italy. He crossed the Alps in favorable weather, but instead of pushing S. made a fatal delay at Placentia, and was surprised and slain on the Metaurus in 207 B. C.

Hase, Karl August von, a German theologian; born in Steinbach, Saxony, Aug. 25, 1800. Hase was called the Nestor of modern scientific theology. He did great service in the reconciliation of the Church's faith to modern thought, and was an equally resolute and effective opponent of orthodoxy on the one hand and rationalism on the other. He died Jan. 3, 1890.

Hashish, an intoxicating preparation made in Eastern countries from common hemp or rather from the Indian variety of it (indica); also a name for this plant itself or for its tender shoots. The juice of the plant has powerful narcotic properties, and is variously made use of. A resin which the plant gives out is often gathered and from this a narcotic is prepared. Hashish produces a kind of intoxication, accompanied with ecstasies and hallucinations. When dried and smoked as tobacco the plant is called bhang. Hashish in several forms is employed in medicine.

Haslar Hospital, an English institution, to the S. of Gosport, England, between Haslar Lake and the sea, is an enormous establishment for the officers and men of the navy, dating from 1746, and capable of accommodating 2,000 patients. The Royal Naval Chapel is also here, and beyond are the Haslar barracks.

Hassard, John Rose Green, an American musical critic; born in New York, Sept. 4, 1836. He was for many years on the staff of the New York "Tribune" as an authoritative musical critic. He died in New York city April 18, 1888.

Hassaurek, Friedrich, an Austrian-American author; born in Vienna, Oct. 9, 1832. As a boy he was a volunteer soldier in the Austrian army in 1848, but came to the United States the next year, and was long a journalist in Cincinnati. He was United States minister to Ecuador under Lincoln. He died in Paris, Oct. 3, 1885.

Hasse, Johann Adolf, a German composer; born near Hamburg, March 25, 1699. He became famous as "the Saxon" through his opera "Sesostris," produced at Naples (1725); and was brought to London in 1733 to head an opposition to Handel as representing the Italian school. Here "Artaxerxes" was produced with success; but Hasse soon left London, subsequently retiring to Venice, where he died Dec. 23, 1783.

Hastings, a maritime town of England, in Sussex, 54 miles S. E. of London. Here the battle of Hastings, one of the most memorable events in the annals of English history, was fought between William, Duke of Normandy, and Harold II., King of England, on Oct. 14, 1066.

Hastings, Francis Rawdon, Marquis of, Governor-general of India, born in 1754. From 1776 to 1782 he served with distinction in the American Revolutionary War. From 1813 to 1823 he was governor-general of India, and was successful in the Nepaulese and Mahratta wars. In his latter years he was governor of Malta. He died in 1825.

Hastings, Warren, first Governor-general of India; born in Daylesford, Worcestershire, in 1732. He was educated at Westminster School, and in 1750 he set out for Bengal in the capacity of a writer in the service of the East India Company. In consequence of the misgovernment of the Nabob of Bengal the company had deprived him of all real power, and now wished to have the country more directly under their control. Warren Hastings was its chief instrument in this undertaking, and in 1772 became president of the Supreme Council of Calcutta.

Hastings displayed extraordinary resource in meeting dangerous movements on the part of the Mahrattas, the Nizam of the Deccan, and Hyder Ali of Mysore, and to procure the needful money was less than scrupulous in his treatment of the rulers of Benares and Oude. He thus gave good grounds for censure, and a motion for his recall was passed in the House of Commons. Fox's India Bill was thrown out in 1783, but next year Pitt's bill, establishing the board of control, passed, and Hastings resigned. He left India in 1785, and was impeached by Burke in 1786, being charged with acts of injustice and oppression, with maladministration, receiving of bribes, etc. This celebrated trial, in which Burke, Fox, and Sheridan thundered against him, began in 1788, and terminated in 1795 with his acquittal, but cost him his fortune. The company in 1796 settled on him an annuity of $20,000 a year, and lent him $250,000 for 18 years free of interest. He passed the remainder of his life in retirement at Daylesford, which he purchased. He died in 1818.

Hat, the principal head covering of the human family, distinguished from the cap or bonnet by having a brim around it. The hat, as a roomy brimmed head-covering, is the direct descendant of the petasus of the ancient Greeks.

The use of felted hats became known in England about the period of the Norman conquest. The merchant in Chaucer's Prologue to the "Canterbury Tales" is described as having "on his hed a flaundrish bever hat." About the period of Queen Elizabeth beaver felts in many shapes became common, and for three centuries thereafter fine beaver hats, mostly dyed black, formed the head covering of the higher classes in Great Britain. But now, though felt hats are the everyday wear of the community, there is no longer such a thing as a genuine beaver hat.

The wearing of beaver hats was common in America far into the present century. They often lasted a man a lifetime, and were sometimes bequeathed by will to heirs. Interesting specimens can be seen in the old Boston State House.

Hats at the present day are fashioned of an endless variety of materials, and especially in the case of those worn by ladies, they are so diversified in form that they defy all definition.

The manufacture of silk hats as a substitute for piled beavers was first attempted about 1810, but it was not till 1830 that silk plush hats were successfully made. Manufacture of straw hats forms an entirely distinct branch of the hat trade.

Hatch, John Porter, an American military officer; born in Oswego, N. Y., Jan. 29, 1822; was graduated at the United States Military Academy, and in the Mexican War took part in various engagements from Palo Alto to the capture of the city of Mexico. In the Civil War was appointed Brigadier-General of volunteers September, 1861, and commanded a cavalry brigade in the Shenandoah Valley and Northern Virginia; at the battle of South Mountain, Sept. 14, 1862, commanded a division; subsequently commanded various districts in the South; and was brevetted Major-General. He died April 12, 1901.

Hatchee, or **Hatchie,** a river, rising in Tippah co., Miss., passes through part of Tennessee, and enters the Mississippi river near Randolph. An action occurred at Davies's Bridge on this river, Oct. 6, 1862, between a Confederate force under General Van Dorn, and one of National troops under General Ord, in which the former were defeated with the loss of 300 prisoners and two batteries. Ord and Veatch were wounded during this battle.

Hatchery, a house for hatching fish, etc. Since the government undertook to stock lakes and rivers in the United States with fish, many hatcheries have been constructed in different parts of the country. They are under the supervision of the fish commissioners.

Hatteras, Cape, a low point of North Carolina. The coast line here turns from the direction of N. E. to that of due N.; violent storms are frequent and render navigation dangerous and the cape is marked by a light raised 190 feet above the sea.

Hatti-scheriff, a decree emanating directly from the Sultan of Turkey, and subscribed with these or similar words, "Let my order be executed according to its form and import." A hatti-scheriff was sent forth on June 6, 1853, confirming the rights of the Greek Christians.

Hatton, Frank, an American journalist; born in Cambridge, O., April 28, 1846; entered journalism young; served through the Civil War in the Army of the Cumberland, being commissioned 1st lieutenant in 1864; after the war returned to journalism. He was appointed by President Arthur Assistant Postmaster-General (1881–1884); Postmaster-General (1884–1885); editor of Chicago "Mail" (1884–1888); editor of Washington "Post" (1888–1894); and died in Washington, D. C., April 30, 1894.

Hatton, Joseph, an English journalist; born in Andover, Feb. 3, 1837. Beginning journalism on his father's paper, the Derbyshire "Times," he edited the "Gentleman's Magazine" (1868–1874); and became a newspaper correspondent (particularly for the New York "Times") and magazine writer. He has also written novels and miscellaneous works.

Hauberk, a piece of armor, supposed to be of German origin, common in the 12th century; being a jacket or tunic, with wide sleeves reaching a little below the elbow, the hood being of one piece with it. In France, only persons possessed of a certain estate called un fief de hauber, were permitted to wear a hauberk, which was the armor of a knight.

Hauck, Minnie, an American opera singer; born in New York city Nov. 16, 1852. Her first appearance was in concert in New Orleans when only 13 years old. She made her operatic debut in "La Sonnambula" in 1868. She has been uniformly successful both in the United States and European countries. She married the Chevalier de Hesse-Wartegg.

Hauff, Wilhelm, a German storywriter; born in Stuttgart, Nov. 29, 1802. His most delightful creation is "Phantasies of the Bremen Rathskeller," in which his fertility of resource and sparkling wit seem unfailing; died in Stuttgart, Oct. 18, 1827.

Haupt, Paul, an American educator; born in Gorlitz, Germany, Nov. 25, 1858; was graduated at the Gymnasium Augustum, Gorlitz, in 1876, and studied in the University of Berlin and in the British Museum; accepted the chair of Semitic Languages at Johns Hopkins University in 1883.

He is the author of valuable books on cuneiform texts, etc.

Haupt, William Ayres ("William A. Mestayer"), an American actor and play-wright; born in Philadelphia, June 8, 1846. He made his first appearance in 1862. He was a popular comedian, and has played with Edwin Forrest, Lester Wallack, and other well-known actors. During the Civil War he served in the engineering corps of the Army of the Potomac. He died in New York, Nov. 21, 1896.

Hauptmann, Gerhart, a German dramatist and poet; born in Salzbrunn, Silesia, Nov. 15, 1862. His taste for practical sociology comes out strongly in his intense and powerful poems and dramas; he settled on a small Silesian farm solely to study peasant life. He has traveled widely, visiting the United States in 1894.

Haussa, or **Houssa,** a people of the Sudan, who have been conquered by the Fulbe, and now constitute the larger part of the population in Sokoto, Adamawa, and Gando. The Haussa language is the common medium of communication in the commercial world of central Sudan. The Haussa themselves are keen traders, and also occupy themselves with agriculture and industrial pursuits (weaving, dyeing, tanning, etc., and the making of baskets, pottery, and iron implements). They have adopted Islam from their conquerors.

Hautboy, an oboe; a wooden musical instrument of two foot tone, played with a double reed. Also an organ stop, consisting of reed pipes slightly conical, and surmounted by a bell and cap of eight feet pitch. The tone is thin and soft.

Haute-Ile, an island of British North America, in the Bay of Fundy, about 8 miles S. W. of Cape Chignecto.

Hauy, Rene Just, a French mineralogist; born in St. Just, department Oise, Feb. 28, 1743. He is the discoverer of the geometrical law of crystallization, and he also considerably enriched our knowledge of pyroelectricity. He died July 3, 1822.

Havana, a city and capital of the Island of Cuba, on Havana Bay, on the N. coast. It is one of the most important commercial points in the Western hemisphere, and its harbor is one of the finest in the world, well sheltered, and entered through a deep and narrow channel, opening into a large basin, capable of sheltering 1,000 vessels. The harbor is provided with excellent covered wharves, and a dry dock. The city is divided into two sections, the older one of which has narrow, crooked streets, while the modern Havana has broad and beautiful avenues, with macadamized drives, lined with palm trees. The parks and promenades of Havana are among the most beautiful in the world. Among the notable buildings are the Opera House, the largest in the world; the Cathedral, built in 1724; the Government Buildings; and the celebrated fortresses, Morro Castle and Punta, at the mouth of the harbor; and La Cabana, a fortress S. E. of Morro, the largest and strongest in Havana. The city has a university, botanical gardens, scientific, educational and benevolent societies, gas and electric lights, and an excellent water supply, from the Chorrera. From 1761 till after the American occupation yellow fever was epidemic every summer, often very severe, but improved sanitary conditions, due to the rigid rule of the American military authorities, have in a large measure overcome the disease, and in 1901 it was considered as wholly stamped out. The manufactures of the city include cigars and cigarettes, sugar, rum, molasses, honey and preserved fruits. Havana was for years the seat of Spanish power in Cuba. The Cuban Evacuation Commission met under the provisions of the protocol of peace; the city was formally evacuated on Jan. 1, 1899, and after that Havana was the seat of American military government till the evacuation in 1902. Pop. 242,055.

In the brief period of American occupation Havana was transformed from one of the most disease-stricken ports in the world into a charming tropical city — a result due entirely to American enterprise. Shanties and sheds that had been for decades breeding places for cholera germs were ruthlessly swept away; streets never repaired in the memory of living man were cleaned or repaved; sewers were rebuilt and houses were unceremoniously entered and disinfected. All this work was done, not spasmodically, but systematically. Cleaning squads were sent from house to house; apartments were cleaned regardless of the protests of their inmates. The accumulations of years from cellars were thrown out.

The most admirable work of all was the cleaning of the sewers. Not since the day when they were first built had they been looked after. Many of them were choked by the refuse of decades. The American authorities not only managed to repair the sewer system and render it in every way serviceable, but did so without injuring the life of a single laborer. The streets of the city were thoroughly cleaned, and in many cases transformed. A magnificent sea wall and a promenade were built; parks were cleared and converted from haunts for thieves into pleasure grounds for the people.

Havelock, Sir Henry, an English general; born in 1795. In 1856 he commanded a division of the army which invaded Persia. In 1857, upon the breaking out of the Sepoy mutiny, he made a forced march from Allahabad to Cawnpur, but reached the latter city too late to prevent the massacre which occurred there. After defeating the rebels in three different engagements, he continued his march toward Lucknow, then beleaguered by a formidable force of mutineers. After victoriously fighting eight more battles with the enemy he fought his way through the besieging army around Lucknow, and accomplished the relief of its exahusted garrison. For this service he received general rank, was created a baronet, and decorated with the cross of the Bath. He died in 1869.

Haverford College, an educational institution in Haverford, Pa.; founded in 1833, by the Society of Friends.

Haversian Canals, or **Haversian Tubes,** in anatomy, certain canals in bone, to which attention was first called by Havres. The haversian canals are the protectors of the blood vessels constituting the nutritive system of the bones.

Haverstraw, formerly Warren, a city in Rockland co., N. Y.; on the Hudson river, 35 miles N. of New York city. It is the largest brick manufacturing city in the world, producing nearly 900,000,000 common brick per year. Pop. (1900) 9,874.

Havre, or **La Havre,** formerly Havre de Grace, a fortified town and the principal seaport on the W. coast of France. Havre, being the seaport of Paris, most of the colonial and other products destined for its consumption are imported thither. A steamship mail service between the United States and France has a terminal at Havre.

Hawaii, a territory of the United States of America, consisting of a group of islands in the middle of the Pacific Ocean; 2,000 miles from San Francisco; area 6,449 square miles; capital Honolulu; pop. (1890) 89,990; (1900) 153,727.

The surface of the islands is exceedingly mountainous and of volcanic origin, with numerous active and quiescent volcanoes. The most prominent physical features of the group are the mountain peaks of Mauna Kea, and Mauna Loa, both 14,000 feet in height. Kilauea, on the Mauna Loa mountain in Hawaii, is the largest active volcano in the world, and has an oval-shaped crater, 9 miles in circumference, and 6,000 feet above sea-level. On the island of Mani is the dormant crater of Mount Haleakala, from 25 to 30 miles in circumference, and 3,000 feet deep, standing 10,000 feet above sea level. On account of its insular formation the coast line is extensive, but there are few good harbors, Pearl harbor at Honolulu being the only important one. The rivers are few and unimportant, being mere mountain streams.

Though the islands are entirely within the tropics the climate is mild, tempered by the N. E. trade winds, blowing nine months of the year. The rainfall in the mountain region is quite abundant, but on the coast slopes rain seldom falls. The soil is very fertile, being formed by the disintegration of the volcanic rocks and decay of vegetable matter. There is abundance of good pasturage, and cattle and sheep raising are important industries. The N. E. mountain slopes are covered with dense forests, and sugar cane, Indian corn, coffee, and wheat are cultivated on the plains. Tropical and semi-tropical fruits are grown to a small extent, and though the natural water supply is quite small the ground, under artificial irrigation, may be made extremely productive. Sugar is the staple industry and is largely cultivated throughout the islands. It was cultivated in very small quantities before 1876, when a treaty of commercial reciprocity with the United States came into effect. Under the provisions of this treaty an era of unexpected prosperity set in, and the production of sugar, as well as rice, increased more than was ever anticipated. Large, barren tracts of land were brought into cultivation by extensive irrigation, some of the ditches being 40 miles in length, carried through dense woods, tunneled through rock, and spanning wide canyons. About 90,000 acres are taken up with the various plantations, with a yearly yield of about 225,000 tons of sugar. It requires an average of 18 months for a crop to mature, the ordinary yield being 3½ tons to the acre; yet on specially rich alluvial soil it is sometimes as great as 9 tons to the acre.

Next in importance comes rice. Its culture is principally carried on by Chinese, and in the San Francisco market it grades with the best coming from China. The ground is plowed and well harrowed, the field is then submerged, the water being allowed to stand till the crop ripens, when it is drawn off. The method of cultivating is crude and primitive. The Chinaman sows the seed thickly in a small field; when the plants are about six inches high they are pulled up and taken to the field for planting, where they are set out in the mud by hand in rows about eight inches apart. When matured the water is drawn off to allow the straw to ripen. The crop is then cut with the sickle. No threshing machines are used by the Chinese rice grower but the grain is separated from the chaff by being beaten out with the hoofs of horses or Chinese cattle, as in ancient times.

Coffee is cultivated, but not to a large extent, although Hawaiian, or Kora coffee takes a high place among the best coffees of the world; the trees are grown anywhere from the sea-level up to 3,800 feet above the sea. One of the greatest difficulties to contend with is insect blight, which is greatly kept in check by peculiar parasites and ladybirds that have been introduced for each kind of insect. The cultivation of tea is carried on wit good results, the best quality of lea being obtained on the higher elevations. The high price of labor prevents its more extensive cultivation.

Hemp has been experimented wit and pronounced by experts to be of good strong description. The expens of cultivation is trifling and the yiel per acre is about 13½ tons. Rami or vegetable silk, grows luxuriantl but the industry is not developed owing to the want of suitable machiner

The soil and climate of Hawaii cannot be excelled for the production o tropical and sub-tropical fruits, an their introduction has added largel to the prosperity of the islands, especially so in the case of semi-tropica fruits, such as the alligator pear, banana, lime, orange, and lemon. Th alligator pear grows to a large size and the fruit is of a superior qualit The flesh is of buttery consistenc with a nutty flavor and it makes a delicious dressing for salads; the larges of these heads is about six inches lon and weighs upward of three pounds The mango grows in great profusion and several varieties are used for making chutney, the best varieties havin been imported from India and Jamaica. It is an evergreen with small glossy leaves; and a gum which exude from the trunk of the tree is used i medicine. It bears fruit severa months of the year, and it is not unusual to find trees with fruit on on side and blossoms on the other.

Cocoanuts grow all along the seashore or any spot where nothing els will grow; but they are now very littl cultivated. The sapodilla, sourso pommelo, cherimoya, custard apple papaw, citron, watermelon, granadilla pomegranate, and tamarind are som of the desirable exotic fruits that d well in the islands. Vegetables of al descriptions are raised throughout th year, and water and cantaloupe melons are superior to those grown i most countries. Pineapples grow wil on all the islands; there are some 2 varieties taking their names from th localities whence they are obtaine Near Pearl City, some 8 miles fro Honolulu, a plantation of an excellen variety exists. The average weight o the fruit is 8 pounds, though the fruit of some varieties have been known t

ach a weight of 17 pounds. The
ineapple season is from the middle of
e month of May to the middle of
ugust.

Bananas are raised in great quan-
ties and shipped to the United States,
e cost of cultivation being very
nall. Along the mountain ranges
e trees and vines in luxuriant
owth, forests of a magnificent spe-
es of tree, whose wood has beautiful
arkings, and capable of taking a
gh polish, equaling the finest walnut
d mahogany; this is the koa tree.
he islands at one time were very
ch in sandalwood, but when the na-
ves found it would be a great source
income to them, they cut down the
d trees in a very short space of time
d sold them to dealers in the United
ates, and neglected to plant young
ees for a future supply.

Not the least important vegetable
oduct is taro. It consists of two
nds — the upland, which grows on
e hillsides in dry ground, and the
wland, or more important staple,
hich is propagated like rice, under
ater. Long irrigating ditches are
quired in preparing the bed. The
ound is leveled off and inclosed by a
all impervious to water. The floor
the patch is made as rich as pos-
ole and the top is cut from the ripe
ots and set out in hillocks placed sev-
al feet apart. The water is let in
d allowed to remain until the crop
mature, i. e., in about 12 months,
e only labor required being to keep
e soil clear of weeds and provide a
pth of about 6 inches of running
ater. Taro can be planted at any
ason and a ripe crop obtained. The
ot is oblong, the largest being about
e foot in length and from three to
ur inches in diameter. The root is
ked by the natives, who make from
what they call poi, the baked root
ing pounded till it forms a paste
hich is thinned by adding water, and
terward allowed to ferment. As a
od it is most nutritious.

Another important plant much used
the natives is the ti; it has also a
ge, oblong root, and the leaves are
a shining green tint. The ti leaves
re at one time woven together, and
med a short cloak, which the na-
es sometimes wore. The root, after
king, is sweet and pleasant to the
taste. It is also used to make an intoxicating drink, by bruising the roots with a stone and steeping in water until it ferments. Besides the plants mentioned, there are many beautiful flowering and foliage plants, among which codiæums (crotons) are worthy of special mention. All the varieties grow in great luxuriance and show exceedingly rich leaf coloring. Round the college grounds in the suburbs of Honolulu, is a hedge of a night-blooming cereus (Cereus nycticalus), which is a magnificent sight when in flower, the blossoms ranging from two to three feet in circumference.

The Hawaiian Islands were discovered by the Spaniards under Gaetano in 1549, and examined by Captain Cook in 1778, and during the greater part of the 19th century formed an independent kingdom, recognized as such by the United States, Great Britain, France, and other governments. In 1893 the reigning queen, Liliuokalani, was deposed and a provisional government formed. This provisional government resolved itself into a Republic in 1894, with two Houses and a President. Several attempts were made toward the annexation of Hawaii to the United States, and on July 7, 1898, the Congress of the United States passed a resolution to that effect. On Aug. 12, 1898, Hawaii was formally annexed to the United States. The islands, now known as the territory of Hawaii, are governed by a governor appointed by the President, and for military purposes are attached to the Military Department of California. All whites, natives of Hawaii, and persons of African descent who were citizens of Hawaii before the annexation, are citizens of the United States. The president of the provisional and republic governments and also the first governor after annexation was Sanford B. Dole.

Hawfinch, a bird of the grosbeak genus and the finch family. It is widely distributed over Europe and the temperate parts of Asia, and is said to be found in Egypt.

Hawk, the name of the several species of birds including the sparrow hawk, and the goshawk. Also the name of the sub-family Accipitrinæ, called more fully sparrow hawks. The bill is short, suddenly curved from the base, a large festoon in the upper mandible. The wings are short, the quills internally emarginate at their base. The tail is rounded. The male is often much smaller than the female. The anterior claws are very unequal. Hawks are generally distributed over the globe.

Hawkesbury, a river of New South Wales, Australia, enters the Pacific at Broken Bay. It has a total length of 330 miles. The Hawkesbury is crossed by a steel girder bridge (1886–1889) on the railway between Sydney and Newcastle. It carries a double line of rails, and is one of the largest structures of its kind in the world, having seven spans of from 410 to 416 feet, and a total length between abutments of 2,900 feet.

Hawkeye State, a designation of Iowa — so named in memory of a famous Indian warrior.

Hawkins, Anthony Hope, an English novelist; writing under the name "Anthony Hope"; born in London, Feb. 9, 1863. He was admitted to the bar in 1887. Among his best-known works are: "A Man of Mark" (1890); and "The Prisoner of Zenda."

Hawkins, Hamilton Smith, an American military officer; born in South Carolina in 1834. He entered the army as 2nd lieutenant in 1861. He was brevetted captain for gallant services at Gettysburg and was made captain in the 6th infantry in 1863. He was brevetted major for services in October, 1865. In 1897 he was colonel of the 20th infantry, commanding Fort Leavenworth, Kansas. When war was declared against Spain (1898) he was within a few months of the retiring age, but went to the front as a Brigadier-General of volunteers. He led the historic charge at San Juan, Cuba, July 2, 1898, and was made Major-General of volunteers, July 8, 1898, going on the retired list the following October.

Hawkins, Sir John, an English writer on music; born in London, March 30, 1719. He collected a most valuable musical library, and after 16 years of laborious research produced in 1776 his "General History of the Science and Practice of Music," in
vols. quarto — a work of admittec
great and accurate scholarship. I
died May 21, 1789.

Hawk Moth, a family of the le
dopterous insects, forming along wi
the clear winged moths and the bu
nets and foresters the tribe Spir
hinges. They are insects generally
rapid flight, and fly about in the tv
light; some species also during the da
Their caterpillars are sixteen-legge
flat, smooth, often green, with trai
verse stripes on the sides and neai
always a horn on the back of the se
ond last segment. One of the mo
remarkable hawk moths is the Death
head. It sometimes measures neai
6 inches across the wings.

HAWK MOTH.

Hawks, Francis Lister,
American clergyman and author; bo
in Newbern, N. C., June 10, 179
practised law for a time with succe
but in 1827 was ordained to the Ep
copal ministry. He was Professor
Divinity at Washington (now Tri
ity) College, Hartford, in 1830–18
and afterward rector of churches
New York, New Orleans, and Bal
more. He died in New York, Se
26, 1886.

Hawksbee, or **Hauksbee, Fra
cis,** an English natural philosophe
born in the 17th century. He is w
known as the improver of the earli

r-pumps of Boyle, Papin, and ooke, and as the first who used glass the electrical machine. He died out 1730.

Hawksbill, in zoölogy, a name for species of turtle. Its horny epider- is plates furnish the tortoise-shell of mmerce. The animal inhabits the dian Ocean, the Pacific, and the armer parts of the Atlantic.

Hawkweed, a genus of plants. ne species are perennial herbs of no pular interest with the exception the orange hawkweed, a native of e S. of Europe, which on account of handsome orange flowers is fre- ently cultivated in gardens.

Hawthorne, Julian, an American velist and journalist, son of Na- aniel; born in Boston, June 22, 46. On leaving Harvard Univer- y he studied civil engineering in esden, but took to authorship. His ccess was not rapid, but popular vor has been accorded to his novels. a journalist he has traveled widely prosecution of his work, and has itten vivid descriptions of some fa- ous trials.

Hawthorne, Nathaniel, an Amer- n novelist; born in Salem, Mass., ly 4, 1804. He was graduated at wdoin in 1825. For a number of ars after this he led a retired and idious life in Salem, writing tales, ny of which he burned, while others peared in newspapers and maga- es. In 1832 he published anony- usly a romance, "Fanshawe," and 1837 his "Twice-told Tales," a col- tion of stories which he had con- buted to various American period- ls. In 1839 he received an appoint- nt in the Boston custom house, but t it in 1841 on a change of govern- nt. On quitting this appointment joined the Brook Farm Associa- n, which was founded upon princi- s similar to those inculcated by urier, but in less than a year the ablishment broke down. In 1843 married and settled in the charm- village of Concord, occupying the parsonage in which Emerson had viously lived, and hence the title his next work, "Mosses from an d Manse" (1846). In 1846 he s appointed surveyor of the port of lem, and held this post three years. 1850 was published "The Scarlet Letter," a romance of early New England life, which was received with the warmest admiration both in America and Europe; and this was followed in 1851 by the no less popular "House of Seven Gables." In 1853 he was appointed American consul at Liverpool by his college friend, Franklin Pierce, then President of the United States. This office he held till 1857, when he went to travel on the Continent. His writings display poetic feeling and great descriptive power, a deep knowledge of the human heart, a pensive melancholy combined with a delicate humor, and a style singularly chaste, elegant, and flowing. He died in Plymouth, N. H., May 18, 1864.

Hay, the stems and leaves of grasses and other plants cut for fodder, dried in the sun, and stored usually in stacks. The time most suitable for mowing grass intended for hay is that in which the saccharine matter is most abundant in the plants, viz., when the grass is in full flower. For the operation of mowing, dry weather, and, if possible, that in which sunshine prevails, is chosen. The making of the grass into hay generally takes three or four days to get it ready for stacking. This period is principally occupied in alternately shaking out the grass and gathering it up into small heaps, previous to stacking.

The total hay crop in the United States in 1900 was 50,110,906 tons, valued at $445,538,870. The greatest hay producing States were New York, Pennsylvania, Iowa, and California.

Hay, John, an American statesman and writer, born in Salem, Ind., Oct. 8, 1838. He was graduated from Brown University, and settled in Illinois as a lawyer, but went to Washington in 1861 as one of Lincoln's private secretaries, acting also as his aide-de-camp. He served under Generals Hunter and Gillmore with the rank of major and assistant adjutant-general. He was subsequently in the United States diplomatic service, stationed at Paris, Vienna, and Madrid. In 1897 he was made ambassador to England, and in 1898, Secretary of State. His literary reputation rests upon "Pike County Ballads," the best known of which are perhaps "Little Breeches" and "Jim Bludso"; "Castilian Days," a volume of travel; and

"Life of Abraham Lincoln" (with J. G. Nicolay). As Secretary of State Mr. Hay has gained a standing equal to that of the most eminent men who have held that high office. In coolness, foresight and statesmanlike appreciation of current and coming events he has no superior among living diplomats.

Hayden, Ferdinand Vandeveer, an American geologist; born in Westfield, Mass., Sept. 10, 1829. He was graduated at Oberlin in 1850. He was surgeon of volunteers in the Civil War, and was brevetted lieutenant-colonel. With the exception of the time spent in the army, he occupied the years from 1853 to 1879 in explorations in the Rocky Mountains and the adjacent country. He edited the first eight reports (1867–1876) of the United States geographical and geological surveys of the territories, and is the author of several works on explorations in the West. He was a member of the National Academy of Science, and of other scientific societies in this and foreign countries. He died Sept. 22, 1887.

Haydn, Joseph, a German musical composer; born in Rohrau, on the borders of Hungary and Austria, in 1732. On account of the excellence of his voice he was appointed a choirboy at St. Stephen's Church, Vienna. At the age of 16 his voice began to break, and he lost his situation as a chorister. From 1761 to 1790 he was musical director to Prince Esterhazy, and composed during this period a great number of works, including some 120 symphonies for the orchestra, 12 operas, etc. In 1798 he published his oratorio of the "Creation," and in 1800 that of the "Seasons." Haydn's principal merit consists in his opening up a new development of instrumental composition, of which his 125 orchestral symphonies furnish abundant proof. He may be said to be the originator of the symphony and of the stringed quartette. He died in 1809.

Hayes, Augustus Allen, an American chemist; born in Windsor, Vt., in 1806. He studied chemistry under Dana. He discovered the organic alkaloid sanguinaria, carried through experiments which led to the construction in 1838 of improved furnaces and boilers, suggested the proce of reducing pig to malleable iron wit out loss by the use of the oxides iron, as well as new processes in co per-smelting, the decomposition of a cohol, and the formation of chlor form, and made important investig tions into the properties of guano. I also examined the constitution of se water and fresh water at vario depths, prepared a report for the na department on the copper-sheathi of vessels, and supplied a novel proce for the manufacture of saltpet Hayes was for many years state a sayer of Massachusetts, and died Brookline, Mass., June 21, 1882.

Hayes, Isaac Israel, an Ame can Arctic explorer; born in Chest county, Pa., March 5, 1832. He w graduated in medicine at the Unive sity of Pennsylvania in 1853, a sailed as surgeon in the Kane expe tion in search of Franklin. In 186 1861 he conducted a second expediti to the Arctic regions, and in 1869 again visited Greenland. He w surgeon of volunteers from 1862 1865, retiring with the brevet rank lieutenant-colonel; and he served the New York Assembly for five yea His Arctic work was recognized medals from the London and Paris ographical societies. He died Dec. 1881.

Hayes, Rutherford Birchar an American statesman; 19th Pre dent of the United States; born Delaware, O., Oct. 4, 1822. I father died before his birth, leavi the family in comparative poverty. was able, however, to be educat first at the common schools, then Latin and Greek with Judge Sherm Finch, of his native town, later in academy at Norwalk, O., and in school at Middletown, Conn. Fr here he entered Kenyon College Gambier, O., and was graduated valedictorian in 1843. He then tc a course in Harvard Law School, a in 1845 was admitted to the Ohio b His health failing, he spent a win in Texas, for the purpose of restor it, in which he succeeded. By the vice of friends he established hims on his return, in Cincinnati, where won respect and success among ablest men of his profession in State. In 1852 he married Lu aughter of James Webb, of Chilliothe, O., a physician of repute. In 858 he was elected city solicitor of incinnati, first by the city council, nd then by popular vote. His affilations were with the Whig party till ne Republican party arose, after hich he was steadily a Republican. n the outbreak of the war he received commission as major of the 23d Ohio egiment of infantry, and was soon romoted to the rank of lieutenant-olonel. He distinguished himself at ne battles of South Mountain, of loyd Mountain, the first battle of Vinchester, at Berryville, Fisher's Iill, and Cedar Creek. After the later engagement he was promoted to ne rank of Brigadier-General. In 864, while still serving in the field, e was elected to Congress from Ohio, nd reëlected in 1866. He supported ne impeachment of Andrew Johnson.

In 1867 he was elected governor of hio and reëlected in 1869, in which ffice his administration attracted naonal attention for its sound and proressive measures. He declined several ffices after retiring from the governorhip, but in the greenback contest of 875 he was nominated and elected as ne sound-currency candidate for the overnorship. This victory determined ne Republicans of his State to preent him as their candidate at the Naonal Convention of 1876, where he as nominated for the presidency gainst J. G. Blaine, O. P. Morton, B. I. Bristow, and other popular candiates. The election came into disute, both parties claiming the elecoral votes of Louisiana, Florida, Oreon, and South Carolina. The conest was left to a special commission f 15, who decided by a vote of 8 to that all of the votes in question hould be counted for Hayes, and for is colleague for Vice-President, Vheeler, thus giving him the presiency. The popular plurality, hower, was against him. His adminisration was characterized by the reumption of specie payment, the inuguration of civil-service reforms, the estriction of Chinese immigration, nd reconstruction measures for the outh. On his retirement he served n the boards of various benevolent ocieties and educational institutions, nd was honored with degrees from Kenyon College, Harvard, Yale, and Johns Hopkins. He died in Fremont, O., Jan. 17, 1893.

Hay Fever, a catarrhal affection of the mucous membranes of the eyes, nose, mouth, pharynx, larynx, and bronchi, accompanied by difficult breathing, induced by the action of the pollen of various plants, prevalent during the hay season, but subsiding at its close, and varying in its severity according to certain atmospheric conditions and the amount of pollen in the air. The diagnosis is easy, as the occurrence of the catarrhal symptoms only in summer separates it from an ordinary "cold in the head"; while their combination with difficulty of breathing in hay fever prevents it being mistaken for spasmodic asthma arising from other causes, in which there is usually no catarrh.

Haygood, Atticus Green, an American Methodist clergyman and author; born in Watkinsville, Ga., Nov. 19, 1839. He became bishop in 1890. He died in 1896.

Haymarket Square Riot, The, a riot which took place May 4, 1886, in Haymarket Square, in Randolph street, Chicago, when the police undertook to break up a public meeting of anarchists. A bomb was thrown by some person, supposed to be one Schnaubelt, who has never since been found. By this assault seven policemen were killed and 60 wounded. Of the anarchists captured, August Spies, Adolph Fischer, George Engel, and Albert R. Parsons were hanged Nov. 11, 1887; Louis Lingg, also convicted, killed himself in prison on the day before the execution; Samuel Fielden and Michael Schwab were sentenced to imprisonment for life, and Oscar Neebe was committed for 15 years. The last three were pardoned by Governor Altgeld. A monument marks the spot where the policemen fell. The anarchist sympathizers have erected a monument also.

Haynau, Julius Jakob, Baron von, an Austrian general; born in Cassel, Germany, Oct. 14, 1786. Entering the Austrian service in 1801, he signalized himself during the Italian campaigns of 1848–1849 by his ruthless severity, especially at the capture of Brescia, where his flogging of women and other atrocities gained him the name of the "Hyena of Brescia." Appointed dictator of Hungary, he was dismissed in 1850 on account of his cruel character. During a visit to London he was mobbed by the indignant populace. He died in Vienna, March 14, 1853.

Hayne, Isaac, an American patriot; born in South Carolina in 1745. After the capitulation of Charleston, he was compelled to subscribe a declaration of his allegiance to the King of Great Britain, provided he might not be ordered to bear arms against his countrymen. He was summoned, however, to the British standard. This he refused as a violation of the compact he had entered into, and hastened to the American camp. Being shortly after taken prisoner by the English, he was tried and hanged, Aug. 4, 1781.

Hayne, Paul Hamilton, an American poet; born in Charleston, S. C., Jan. 1, 1830. At first a lawyer, he turned to journalism, and in 1855 his maiden volume of verse appeared. He served through the war, retired from the field in poverty, and wrote poetry. His productions mark him easily first among Southern poets. He died in Augusta, Ga., July 6, 1886.

Hayne, Robert Young, an American statesman; born in South Carolina in 1791; was admitted to the bar in 1812; served in the war with Great Britain; and at its close returned to his practice in Charleston. He sat in the United States Senate from 1823 to 1832. He was a vigorous opponent of protection, and in 1832 boldly supported in Congress the doctrine of Nullification. Daniel Webster's reply ranks among his ablest speeches. In November, 1832, South Carolina adopted an ordinance of nullification, in December Hayne was elected governor, and the State prepared to resist the Federal power by force of arms. A compromise, however, was agreed to, and the ordinance was repealed. Hayne died Sept. 24, 1839.

Haynes, Arthur Edwin, an American mathematician; born in Van Buren, N. Y., May 23, 1849; was graduated at Hillsdale College, in 1875. He held the chair of Mathematics at the University of Minnesota in 1893–1896, and in its Engineering Department in 1896–1901. He was the author of "The Desirability (Uniformity in the Use of Mathema ical Symbols and Terms," etc.

Hays, Isaac, an American phys cian; born in Philadelphia, Pa., Ju 5, 1796; was graduated at the Un versity of Pennsylvania in 1816, ar at its Medical Department in 182(became editor of the "American Jou nal of the Medical Sciences" in 182 and in more than 40 years of wo on that periodical gained a wide rep tation. His code of ethics which l drew up for the American medical a sociation was adopted by every Sta and county medical society in tl United States. He died in Philade phia, Pa., April 13, 1879.

Hazard, a game with two dice.

Hazel, a genus of shrubs or sma trees. It belongs to North Americ Europe, North Africa, and Asia. Tl hazel produces the nuts called filbert and grows best in a tolerably dry soi The hazelnut oil is little inferior i flavor to that of almonds. The roo are used by cabinet makers for veneer ing.

Hazel Grouse, a species of grous inhabiting the continent of Europ and great part of Asia, allied to tl ruffed grouse of the United States.

Hazeline, an alcoholic liquid di tilled from the fresh leaves of tl witch-hazel, native to the Unite States. It is exceedingly useful a an application to wounds, stanchin the bleeding and promoting healin It is equally useful for bruises, inflan matory swellings, sprains, and tl like.

Hazeltine, Mayo Williamso an American journalist; born in Be fast, Me., in 1841. Originally a lav yer, he has long been well known a literary editor of the New Yo "Sun."

Hazen, William Babcock, a American military officer; born i West Hartford, Vt., Sept. 27, 183(was graduated at the United Stat Military Academy in 1855; serve with marked distinction during tl Civil War; was promoted Major-Ge eral of volunteers on Dec. 13, 186 on which day he captured Fort M Allister, and colonel United Stat army, in 1866; observed the Franc Prussian War on French territor d was United States military at- che at Vienna during the Russo- urkish War. He died in Washing- n, D. C., Jan. 16, 1887.

Hazlitt, William, an English itic; born in Maidstone, Kent, Eng- nd, April 10, 1778. In 1805 he be- n his literary career with an essay, On the Principles of Human Ac- on." This was the germ of a long d successful career, during which gave to the world "Lectures on the terature of the Elizabethan Age"; Lectures on the English Poets," etc. e died in 1830.

Head. When the anterior part of e body of an animal is marked off a difference in size, or by a con- riction (neck), it is called head. ie presence or absence of a head was rmerly much used as a character in assification. Thus Latreille divided imals into the headless, and those ovided with a head: and these again rmed two groups, the Vertebral ani- als, with heads properly so called, d Cephalidia, with small, indistinct, ads. But this classification would parate the oyster and all other la- ellibranch mollusks from the snail, ttlefish, etc.; it is, in fact, an artiial character. The mouth and prin- ral nervous organs are the guides to e anterior end of the body, where e head, when recognizable, is situ- ed.

The head of the vertebrated animals esents a regular series of increasing mplexity from the lancelet upward. that fish the most anterior part of e nervous cord is lodged in a canal arcely distinct from that which con- ins the rest of it. Ascending in the ries, it becomes evident that as the terior nervous mass enlarges, and ganglia increase in complexity, the terior vertebræ change their char- ter; as the brain becomes specialized does the brain case or skull. In an the brain attains its highest de- lopment and the head its greatest mplexity, the difference between ull and face being now most pro- unced. The increasingly globular rm of skull in the vertebrates is due the greater increase of the cerebral mispheres relatively to that of the se of the brain and axis of the skull: nce the brain comes in man to over- ng the face.

Head, Sir Edmund Walker, an English statesman; born in Maidstone, England, in 1805; was educated at Oxford University; lieutenant-governor of Nova Scotia in 1847–1854, and governor-general of Canada in 1854–1861. His administration was marked by the choice of Ottawa as the capital of Canada, by the visit of the Prince of Wales in 1860, and by several other important events. He died in London, England, Jan. 28, 1868.

Head, Sir Francis Bond, an English author; born near Rochester, England, Jan. 1, 1793; joined the army early in life; served in the corps of engineers during the campaign under Wellington; led an expedition to work the gold and silver mines on the Rio de la Plata in South America in 1825; retired in 1828; and was lieutenant-governor of Upper Canada in 1835–1837. He died in Croydon, England, July 20, 1875.

Head, Sir George, an English writer of travels; born in 1782. He held various posts in the army and was present at most of the great battles of the Peninsula. In 1814 he proceeded to Canada to be chief of the commissariat of a proposed navy on the Canadian lakes, and subsequently published his experiences in "Forest Scenes and Incidents in the Wilds of North America." He was knighted in 1831. He died in 1855.

Headache, an ache in the head arising from a variety of causes. The principal forms it assumes are: (1) Congestive headache, arising from over-fullness of blood. (2) Anæmic headache, which arises from a deficiency of blood, and occurs in persons badly fed or in weak girls. (3) Nervous headache, which often attacks the studious. (4) Neuralgic headache, which is often due to exposure to cold. In cases in which headache arises from disease of the liver, nausea results, and this characterizes bilious headache. Impurity of blood and gouty affections, as well as disease of the kidneys, are frequent sources of headache.

Head Hunters, in anthropology, a name given to several races or tribes, notably to the Dyaks and Kyans of Borneo and Celebes, on account of their savage mania of hunting for heads, generally by nocturnal ambuscades, and treasuring them as trophies. Tylor connects the barbarous custom with the rite of funeral human sacrifice, and says that the Dyaks considered that the owner of every human head they could procure would serve them in the next world, where their rank would depend on the number of heads they had taken in this. The present of a head is exacted from every aspirant to a Dyak bride. The influence of Sir James Brooke did a great deal to discourage head-hunting, and it is now disappearing. The resemblance of this practise to the taking of scalps by American Indians is obvious.

Headley, Joel Tyler, an American prose-writer; born in Walton, N. Y., Dec. 30, 1813. Graduating from Union College in 1846, he became assistant editor of the New York "Tribune." His writings had great currency in their day, and contain much valuable information about early American history. He died in 1897.

Headley, Phineas Camp, an American Congregational divine; born in Walton, N. Y., June 24, 1819. He wrote: "Women of the Bible"; a series of "Heroes of the Rebellion" (Grant, Ericsson, Farragut, Sherman, etc.); "Court and Camp of David."

Head Money, a tax of 50 cents imposed by act of Congress, Aug. 3, 1882, on every immigrant brought to the United States. The national act provides that the tax shall be paid — by the master or owner of the vessel bringing the immigrants — to the collector of the port, and by him turned over to the treasury of the United States, to be used by the secretary to defray the expenses of regulating immigration and to relieve such immigrants as are in distress.

Health, that condition of the living body in which all the bodily functions are performed easily and perfectly and unattended with pain.

Health, Bill of, in shipping, a document carried by a ship, unless engaged in the coasting trade or specially exempted. It is granted abroad by the consul or consular agent, or, if there is no such person, by a foreign consul. When no contagious or infectious disease is known to exist at
the place of departure, the bill
"clean"; when there is reason to f
the appearance of such disease,
bill is "suspected"; when such d
ease actually exists, the bill is "fou

Health, Municipal Boards
in the United States, institutions
ganized under city government, a
deriving powers from state laws
the purpose of protecting the hea
of the citizens. Every city of imp
tance has a municipal board of heal

Health, State Boards of, ins
tutions established by State legis
tive enactments, intended to have
central advisory relation with lo
sanitary organizations, and to super
tend a State system of vital statisti
They have been created in nearly
the States and in the District of C
lumbia.

Healy, Timothy Michael,
Irish political leader; born in Bant
County Cork, Ireland, May 17, 185
took an active part in the Land Leag
agitation and was almost continuous
in Parliament after 1880. He wro
"A Word for Ireland," and text boo
on the Land Acts. He took a prom
nent part in the struggle against Pa
nell's leadership, and was recogniz
as one of the ablest members of t
Irish party.

Heard, Franklin Fiske,
American jurist and author of la
books; born in Wayland, Mass., Ja
17, 1825; was graduated at Harva
College in 1848; admitted to the b
in 1850; settled in Boston in 1855.

Hearing, a function of the ea
It is on the auditory nerve, situated
the temporal bone, that the sonoro
undulations make their impressio
the vibrations being propagat
through the surrounding medium, ge
erally air, by the corresponding wav
or undulations they produce in it. T
pitch depends on the number of vibr
tions in a given time, the high not
being the quickest, and the low t
slowest. The strength or loudness d
pends on the force and extent of t
vibrations. The timber or quality
musical sounds, as of the flute, vi
lin, etc., all sounding a note of t
same pitch, depends on differences
form in the undulations.

Hearn, Lafcadio, an America
journalist; born of an English fathe

d a Greek mother, in Santa Maura,
nian Islands, June 27, 1850. He
as educated in England and France,
d resided in the United States and
Japan. He has written most in-
erestingly on West Indian, Oriental
d other subjects.

Hearn, David William, an Amer-
an clergyman and educator; born in
oston, Mass., Nov. 21, 1861; was
raduated at Boston College in 1880;
ter studied at Woodstock College,
aryland, and in Europe; and was
dained in the Roman Catholic
hurch. He was at different times
rofessor in Georgetown University,
ce-president of Boston College, and
the College of St. Francis Xavier,
ew York, and became president of
e latter college in 1900.

Hearsay Evidence, testimony
ven at second hand by persons who
ave heard the actual witness relate
admit what he knew of certain
ansactions. Such evidence, as a
eneral rule, is not admissible in
urts of justice.

Hearst, Phebe, philanthropist;
rn 1840; maiden name Appersin;
arried in 1861 George F. Hearst,
te United States Senator from Cali-
rnia, who died in 1891. Has estab-
shed and endowed five kindergarten
asses for poor children, and a man-
al training school in San Francisco;
veral kindergartens, and a kinder-
arten training school in Washington,
. C.; made donations to the Ameri-
n University, Washington, and given
200,000 to build National Cathedral
chool for girls; has donated from
,000,000 to $4,000,000 for buildings
r the greater University of Califor-
a, having previously paid the cost
a competition of the best architects
America and Europe for the plans;
aintains a school for mining engi-
eers at the University of California
a memorial to her husband; has
ilt, endowed and given thousands of
llars to free libraries, established
orking girls' clubs, and done much
her educational and charitable work.
rs. Hearst is Regent of the Univer-
ty of California.

Hearst, William Randolph, son
the late Senator George F. Hearst
d of Phebe Hearst; born in San
rancisco. Has been a successful
urnalist from early life, and owns
Hearst's Chicago American, the New York American and Journal and San Francisco Examiner, all newspapers of great influence and circulation. Has been prominently mentioned in 1903, especially by the labor element, as Democratic candidate for President of the United States.

Heart, a hollow muscular organ, the function of which is to maintain the circulation of the blood. The organs of circulation are the heart, the arteries, the veins, and the capillary vessels. The blood is either arterial or venous, according to the relative proportions of oxygen and carbonic acid gas it contains. The venous blood which has returned to the right side of the heart from the body, is propelled along the pulmonary artery by the contraction of the heart into the lungs, where by the absorption of oxygen and the giving off of carbonic acid gas it becomes arterial blood, which then is conveyed along the pulmonary veins to the left side of the heart, and is thence distributed throughout the body to nourish it and repair its losses.

Heat, the name given to a peculiar sensation, and also to the agent by which that sensation is produced, this being now supposed to be a certain motion in the minute molecules of which all bodies are composed.

One of the most important and obvious effects of heat is to alter the temperature of bodies. In almost all cases when heat is supplied to a body the temperature of the body rises, and when heat is removed the temperature of the body falls. Temperature is, in fact, the tendency that a body has to impart heat to other bodies; and when heat is supplied or removed from a body, that tendency is increased or diminished. Different bodies require very different amounts of heat in order to raise their temperature through the same number of degrees. In the first place, it requires twice as much heat to raise the temperature of 2 pounds of iron from 0° C. to 1° C. as it does to raise 1 pound of iron from 0° to 1°; and again equal quantities of different materials require different amounts of heat to raise their temperature through any given number of degrees. Thus it requires about 30 times as much heat to raise the temperature of 1 pound of water 1°

as to raise the temperature of 1 pound of mercury by the same amount.

Heat alters the dimensions of bodies. Increase of volume almost always results from addition of heat. There are only, in fact, three or four exceptions to this law. One of these is the well-known phenomenon presented by water between the temperatures of 0° C. and 4° C. Between these temperatures the volume of water decreases as the temperature rises. Above 4° C., however, its volume increases as the temperature rises. Thus, at 4° C. the volume of the water is a minimum and this point of temperature is called the point of maximum density for water. There are one or two other bodies which increase in volume on solidifying from their melted condition. Iron is one of these, and bismuth another; and it is this property that makes these bodies capable of affording sharp castings.

Addition of heat liquefies solid bodies, and converts liquids into gases. This we have good reason to believe is an absolutely general rule, though we have not yet succeeded in liquefying all solids, or in liquefying and solidifying all gases, which is the reverse process. During the conversion of a solid into a liquid, or a liquid into a gas, a considerable quantity of heat is absorbed, and in the reverse process heat is given out; but this is one of the cases in which, though heat is taken in or given out, the temperature is not altered. Hence the heat is said to be made latent.

That heat is a form of energy is now considered by all to be beyond question. Every substance, whether solid, liquid, or gaseous, is considered to have some kind of molecular structure. What the nature of the molecular structure is, is a question of great difficulty, nay, a question that at present no one pretends to be able to answer; but whatever is the nature of the molecular structure, it is certain that heat consists of relative motions of the particles. The greater the energy of the motion the higher the temperature of the body, so long as it maintains its original state, solid, liquid, or gaseous; and an alteration in the nature of the motion probably, we may even say certainly, constitutes the change from one of the states of matter to another.

Heat, radiation of, consists
the propagation of heat from a ho
body to a colder one through an in
vening medium which is not hea
during the process.

Heat Engine, a thermodyna
engine in which motive power is
duced by the development of h
Such are steam and hot-air engi
and others which are effective by
explosion of gas, etc.

Heat, or **Heather,** a shrub of
family Ericaceæ, mostly natives of
Old World, though the common he
of England is also indigenous to a
localities in New England, Nova S
tia and Newfoundland. The Sco
heather-bell is Erica cinerea.

Heathen, in the Old Testament
Gentile, one not a Jew; but with
further implication that he worshi
false gods, or that, if he served Je
vah, he did so by forbidden metho
and that, in consequence of his er
neous faith, he, or at least his fell
worshipers, practised moral abomi
tions abhorrent to the true people
God.

Heathfield, George August
Elliot, Lord, a British milita
officer; born in Roxburghshire in 17
He entered the British army in 17
was wounded at Dettingen in 17
and in 1762 took part in the captu
of Havana. In 1775 he became co
mander-in-chief of the forces in I
land, and soon after governor of
braltar. Spain and France havi
sided with the United States agai
Great Britain, Gibraltar was besieg
by the two former powers, and succe
fully defended by Elliot from 1779
1783, the siege and defense bei
among the most memorable in histo
He died in 1790.

Heaton, John Henniker, an E
glish journalist; born in Rochest
May 18, 1848. At the age of 16
emigrated to Australia, became co
nected with the press, and was pron
nent in all public and philanthrop
works in the Australasian colonies.
M. P. for Canterbury, England, he i
troduced a proposal for a univers
international penny postage syste
In 1898 he carried his imperial pen
postage bill through Parliament.

Heaven, in theology, the place
state of the blessed. Heaven amo

e Greeks and Latins was regarded the home of the greater gods, not as e abode of the just after death. In ost of the ethnic beliefs, heaven, as state, is a realization of the earthly mmum bonum. There are three ief sites of the ethnic heaven: (1) me distant part of this earth: The ats of happiness are represented by me Hindu writers to be vast mountins on the N. of India; (2) below e earth, as many of the lower races ill think; and (3) in the extreme est, an opinion with poetic beauty its favor, since it is in that region e sun descends to his home, the land ere, according to the solar myths, ere is no more night.

In Jewish history, many passages late to heaven, or the heaven of avens, as the special abode of God, d very high. With regard to man, e references in the Old Testament a state of existence beyond the present are few; these few, however, asn joy and pleasure to the righteous, tended by resplendent glory.

In Christianity, the heaven of blessness is spoken of as if its locality s upward from the earth. God, om the disciples and Christians nerally were taught to address as eir Father, is there; Christ came nce at first, and when His mission earth was complete, reascended ither. The Holy Spirit was sent wn from heaven; the throne of God there; nay, in one sense, all heaven that throne. Innumerable angels e in heaven, surrounding the Divine rone; there is a temple also. Multides of persons, sealed as the servts of God, out of every nation, shall there, clothed in white robes and th palms in their hands. They all no more hunger or thirst, or feel due heat or any sorrow. This feity will not be reached till after the surrection, when this corruptible all put on incorruption, and this rtal immortality, death, the last emy, being destroyed.

Heaven Bridge, a bridge, somenes called the Bridge of Death, supsed to reach from this world to aven, spanning the abyss of hell. ong this bridge the souls of the derted must travel: the good to pass er in safety, the wicked to fall into abyss. It is spoken of under different names in the Zend-Avesta, in the Rabbinical literature, and the Preliminary Discourse to Sale's translation of the Koran. This bridge exists in the mythology of the Javanese, the Karens, the Bornese, the Greenlanders, and the Indians of North and South America. It has a place in the myth of Baldur; it lingers in the English song of "The Brig o' Dread"; and to this day the peasant of the Nievre tells of a little board put by St. John between the earth and Paradise.

Hebe, the Greek goddess of youth, daughter of Jupiter and Juno — answering to the Latin goddess Juventas. She was originally the cup-bearer to the gods, but being superseded by Ganymede, she was employed to harness her mother's peacocks and prepare Juno's chariot. She subsequently became the wife of Hercules and the mother of Alexares and Aniatus.

Heber, Reginald, an English poet, and clergyman; born in Malpas, Cheshire, April 21, 1783. On the death of Bishop Middleton he was offered the see of Calcutta, which he accepted. On Ascension Day, 1824, Bishop Heber held his first visitation in the cathedral of Calcutta; and he subsequently made progresses through various parts of his very extensive diocese, consecrating churches and taking the appropriate steps for extending the knowledge of Christianity among the Hindus. Having taken a journey in the discharge of his episcopal duty he arrived at Trichinopoli, April 1, 1826, and on the next day while bathing he was seized with an apoplectic fit which terminated his existence. He published a volume of hymns in 1812, and after his death was published a "Narrative of a Journey through the Upper Provinces of India," from his MSS.

Hebert, Jacques Rene, a French Revolutionist; born in Alencon, in 1755. At an early age he went to Paris as a servant. Soon after the commencement of the Revolution he became one of the most prominent members of the extreme Jacobins, and when this group established "Le Pere Duchesne" newspaper, Hebert was made editor of it. In consequence of the events of Aug. 10 he became a member of the revolutionary council, and played a conspicuous part in the massacres of September. He was one of the commission appointed to examine Marie Antoinette. He and his associates, called Hebertists, were mainly instrumental in converting the Church of Notre Dame into a temple of Reason. But he went too fast for Robespierre, who had him guillotined March 24, 1794.

Hebrews. The appellation of Hebrew (from the Hebrew word Ibri, from the other side, that is, of the Euphrates), so far as we can learn from history, was first given to Abraham by the people of Canaan, among whom he dwelt (Gen. xiv. 13). It seems to have been applied to him on account of his emigration (about 2,000 B. C.) from Mesopotamia, beyond the Euphrates, into the land of Canaan (Palestine). Some, however, consider it as a patronymic derived from Heber, great-grandson of Shem, from whom Abraham was descended. Whatever meaning was attached to the term Hebrews, before the time of Jacob (Israel), it appears afterward to have been limited to his posterity, and to have been synonymous with Israelites. This latter term was used by the Jews of themselves among themselves, the former was the name by which they were known to foreigners. The word Hebrew is used either where foreigners are introduced as speaking (Gen. xxxix: 14, 17; xli: 12; Ex. i: 16; I Sam. iv: 6, 9), or where they are opposed to foreign nations (Gen. xliii: 32; I Sam. xiii: 3, 7). So in Greek and Roman writers we find the name Hebrews or Jews, but never Israelites.

Hebrew Language and Literature.— The Hebrew language forms a branch of that extensive family of languages called Semitic, from the real or supposed descent of those who speak these languages from Shem, the son of Noah. Once identical with the Phœnician, Hebrew was adopted by Abraham and his family in Palestine. The peculiar religious and moral notions of the Hebrews could not but impress upon it by degrees a distinct character, and thus Hebrew became a distinct dialect. In the antiquity of its extant literary remnants it far surpasses all other Semitic idioms, and in richness and development is only inferior to the Arabic.

The extant classical Hebrew
ings embrace a period of more
1,000 years from the era of Mose
the date of the composition of
books of Chronicles, which stand
in the Hebrew Bible. We natu
expect that the language of the ear
books should differ considerably
that of the later, and that we w
even be able to trace a gradual ch
in the form of the language, becor
more and more decided as century
lowed century, and new influe
were brought to bear upon it.
expectation is not, however, reali
There is indeed to be observed a
decided difference in style and
guage between the earliest and
very latest Hebrew writings, but
difference was the result, not of a
gradual process of change extend
over centuries, but of a very sud
and rapid revolution. Hence the
tant Hebrew writings, when classi
with respect to language, have usu
been arranged in two great divisi
— those of a date earlier than
Babylonish captivity, and those o
subsequent date. In passing from
book of Genesis to the books of S
uel we do not recognize any very st
ing difference in the language. Dou
less there is a difference; but not s
a difference as we might expect to
in writings separated from one anot
in date by so considerable a peri
not so much difference as we actua
find when we take up an English
thor of the 17th century, or even la
and compare his language with
English of the present day. The
planation of this remarkable pheno
non is not to be found in the reject
of the traditional belief as to the
and authorship of the Pentateuch.

It is probable that the language
as it were, stereotyped by becoming
language of books held in highest
teem, diligently studied by the learn
frequently committed to memory,
adopted as a model by succeeding w
ers.

The most brilliant epoch of mode
Jewish literature is incontestably t
of the domination of the Moors
Spain. Treated by these conquer
with a mildness which contra
strongly with the cruelty which wh
the Christian kings of that coun
used them, the Jews applied themsel
enthusiastically to the culture of

ce and literature. The proscribed
tion soon found itself at the head of
e civilized world, without excepting
en the Arabs, whose intellectual cul-
re is a subject of admiration among
l historians of that time. No science
mained unstudied by the Israelites;
tronomy, geography, philology, medi-
ne, history, poetry, music, the Span-
h rabbis knew well and taught well.
he Jewish school of Toledo was the
ost renowned of all the schools in
e Peninsula. This is the era of the
eat Moses ben Maimon (Maimoni-
s), the illustrious disciple of Aver-
es; of the poet and philologist Aben-
zra; of David Kimchi, of Isaac Pen-
d, etc. The age of persecution of
e Jews in Spain had set in several
ars before it reached Portugal, and
e celebrated Academy of Lisbon
ourished up to the end of the 15th
ntury. But at last the unfortunate
eople were driven from that country,
nd took up their scattered residences
France, Germany, Italy, and, in
ct, in most of the countries of Eu-
ope, where they could find the least
leration. At Leghorn they founded
ose printing establishments from
hich issue at the present day a great
umber of the works published in He-
ew. The 17th century was more fa-
l to Judaism than even the centuries
persecution, for there sprang up
ithin itself a more terrible plague
an persecution — incredulity. It
as the age of Spinoza, the pantheist,
hom the orthodox Jews even of our
ays regard with horror. But even
efore his day the Hebrew language
ad been falling rapidly into disuse
mong the learned, who, with the ex-
eption of a few enthusiastic rabbis,
mployed in their works the language
f the country in which they had set-
ed. In Germany many of the writ-
rs of the 18th and 19th centuries are
ews, or of Jewish extraction, and
re among the brightest names in her
terature. We need only mention
ose of Moses Mendelssohn, the cele-
rated philosopher; Neander, Hein-
ich Heine, Berthold Auerbach, Herz,
orne, etc.

Hebrews, Epistle to the, one of
he most important epistles of the New
estament. Clement of Rome referred
o it about A. D. 96, as did Justin Mar-
yr in the 2nd century, followed in due time by many other Christian fathers. When the epistle was written, the temple worship seems still to have continued (v. 1–4, viii: 3, ix: 25), which would place its date earlier than A. D. 70, the year when Jerusalem was destroyed. Its author was not one of those who had heard Jesus, but belonged to the generation immediately succeeding (ii: 3). Who he was, is a question which has excited difference of opinion both in ancient and modern times. The Greek fathers generally attributed the epistle to St. Paul; the Latin Churches in Europe and Northern Africa were long of a different opinion, but by the commencement of the 4th century the Eastern view largely prevailed, in the West as well as in the East, and by the commencement of the 5th century it was everywhere dominant. The Council of Trent gave a decision in favor of St. Paul, but in Protestant countries the question is still held to be a debatable one. But, taken as a whole, the Greek composition is more finished and more rhetorical than that of the apostle. If Paul was not the author, who was? The early Church said Clement of Rome or St. Luke or Silas, called also Silvanus; Luther suggested Apollos, a much more probable opinion, which has since been ably defended in Germany by Semler, Bleek, De Wette, Tholuck, etc.

The "Hebrews" to whom the epistle was addressed were the Jewish converts to Christianity, specially those resident in Palestine, to whom Aramæan was vernacular, though they knew Greek.

Internal evidence shows that the Palestinian Christians to whom it was addressed were in great danger of being seduced or persecuted again into the Judaism which they had left. The epistle was designed to keep them steadfast. It opens with arguments for the divinity of Christ and His consequent superiority to the angels. Hence Christianity bestowed through him is superior to Judaism communicated by means of angels. He, a son, is superior to Moses, a servant, His everlasting priesthood is superior to that of Aaron; His sacrifice was an effective one, of which those of Judaism were only types and shadows; Christianity was founded on the New Covenant, which was to abide, while the Old one decayed and was ready to vanish away. Let the converts hold fast to their Christian belief, avoid apostasy, and imitate the ancient worthies, whose animating principle was faith, seeking for a "continuing city" in another world rather than in this.

Hebrides, a large group of islands, 490 in number, situated off the W. coast of Scotland, of which 120 are inhabited. They comprise, in all, an area of about 3,000 square miles. These islands are for the most part rocky and infertile, but well adapted to grazing purposes, the chief industry being the pasturing and rearing of live stock. The moors and fens abound in winged game, hare, etc., and are visited by sportsmen in great numbers, being largely and profitably rented for sporting purposes. The islands are a resort for summer tourists on account of their picturesque scenery, which combines ocean and hill views admirably. There are also picturesque lakes, bogs, glens, and streams in great number. The fishing industry is considerable. Pop. (1901) est. over 100,000.

Hebrides, New, a group of islands in the South Pacific, discovered by Quiros, in 1506. Captain Cook, who surveyed most of them in 1773, gave them their name, as being the most W. of the islands of the Pacific. They extend over 375 miles. Area, 4,200 square miles. The soil in the valleys is fertile, but the islands are mostly mountainous, and some have active volcanoes. Since 1880 the group has formed a British dependency. Pop. (1901) est. 135,000.

Hebron, one of the oldest cities in Palestine, belonging to the tribe of Judah, 21 miles from Jerusalem. It was the seven years' residence of King David before he conquered Jerusalem. The modern town, El Khalil ("the friend"— of God, Abraham), is a poor place, inhabited by some 10,000 people. It lies low down in a narrow and picturesque valley — the Valley of Eshcol, famous now, as of old, for its thick clustering grapes, its olives, and other fruits. The church erected by the Empress Helena, the mother of Constantine, on the spot where Abraham is said to have been buried, has been converted into a mosque called El-Haram ("sa tuary"), built to enclose the c which is the traditional burial-pl of Abraham, Isaac, and Jacob a their wives.

Hecate, a mysterious goddess w was apparently unknown to the Gre of Homeric times and may be Oriental origin. She makes her fi appearance as a goddess having pov over earth, heaven, and sea. T triple power may perhaps give the c to the fact that in art she is occasi ally represented as a triple figure. H power was above all displayed in t matter of ghosts. She also herself a peared as a bogey, with torch a sword, and snakes for hair; or s might appear as a dog, a mare, a li ess, or a cow. As her appearance w the sign for dogs to bark, so she w supposed to be accompanied by a tra of Stygian dogs.

Hecatomb, in classical and H meric ages, a sumptuous or magn cent sacrifice — originally consisti of the sacrifice of 100 beasts of t same kind, at 100 altars, by 1 priests or sacrificers. Pythagoras said to have sacrificed a hecatomb 100 oxen to the Muses, in joy and gra itude for his having discovered t demonstration of the 47th propositi of the first book of Euclid.

Hecker, Friedrich Karl Fran a German-American soldier; born Eichtersheim, Baden, Sept. 28, 181 After studying law in Heidelberg, abandoned his profession for politic life. On the outbreak of the revol tion in Germany in 1848 he endeavor to convert the preliminary conventic into a permanent republican assen bly. But, frustrated in this attemp he put himself at the head of a ban of revolutionists, and invaded Bade from the S.; he was, however, d feated at Kandern and fled to Swit erland. In the following year he r moved to the United States, and b came a farmer near Belleville, Ill. O the outbreak of the Civil War l raised a regiment of Germans, and af erward for a time commanded a br gade. He died at St. Louis, Marc 24, 1881.

Hecker, Isaac Thomas, an Ame ican Roman Catholic clergyman; bor in New York, Dec. 18, 1819. H founded the order of the Paulist

.858), became their superior; and tablished the "Catholic World" .865), editing it till he died. He ed in New York city, Dec. 22, 1888.

Hecla, or **Hekla,** a volcano of Ice- nd, about 20 miles from its S. W. ast, about 5,000 feet in height, and .ving several craters. It is composed iefly of basalt and lava, and is al- ays covered with snow. Many erup- ons are on record. One of the most emendous occurred in 1783, after hich the volcano remained quiescent ll September, 1845, when it again ecame active, and continued with lit- e intermission till November, 1846, discharge ashes, masses of pumice one, and a torrent of lava.

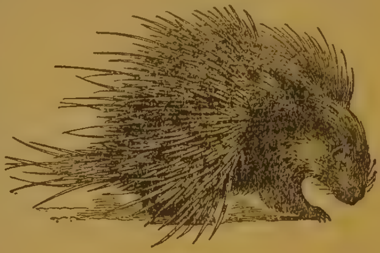
Hector, the son of Priam and ecuba, the bravest of the Trojans, hose forces he commanded. His wife as Andromache. His exploits are lebrated in the "Iliad."

Hecuba, a daughter of Dymas, ing of Thrace; according to some of isseus, or of the river Sangarius and etope. She was the second wife of riam, King of Troy, to whom she ore Hector and Paris. The old agedians represent her on the stage a tender mother, a noble princess, nd a virtuous wife, subjected to the ost cruel destiny.

Hedge, a fence formed of living ees or shrubs.

Hedge, Frederick Henry, an merican scholar; born in Cambridge, ass., Dec. 12, 1805. He edited the Christian Examiner" (1857–1860), nd was Professor of German at Har- rd University (1872–1881). Deep- read in philosophy, ecclesiastical story, and German literature, he as a finished writer and a polished ator. He translated and wrote nu- erous hymns for the Unitarian hurch, and introduced German schol- ship and literature into this coun- y. He died in Cambridge, Mass., ug. 21, 1890.

Hedgehog, a quadruped distin- uished by having the body covered ith spines instead of hair. The skin the back is provided with a great bicular muscle which enables the nimal to roll itself up in the form a ball. The tail is very short. There e several species — some authorities numerate 14. The best known is the common hedgehog. This species has a long nose, the nostrils bordered on each side by a loose flap; the hind feet have five toes; the ears are short, rounded, naked, and dusky; the upper part of the face, sides, and rump covered with strong, coarse hair, of a yellowish ash color, the back with sharp, strong spines of a whitish tint with a bar of black through their middle. They are usually about 10 inches long, the tail about one. Their usual residence is in small thickets, and they feed on fallen fruits, roots, and insects; they are also fond of flesh, either raw or roasted. The hedgehog defends himself from the attacks of other animals by rolling himself up, and thus exposing no part of his body that is not furnished with a defense of spines. It may be rendered domestic to a certain degree, and has been employed to destroy cockroaches which it pursues with avidity. In the winter the hedgehog wraps itself in a warm nest, composed of moss, dried hay and leaves, and remains torpid till spring.



HEDGEHOG.

Hedge Warbler, or **Hedge Sparrow,** a bird occurring in all temperate climates. It feeds on insects, worms, and seeds; and its nest, built of green moss, roots, and wool, and lined with hair, is often finished early in March. The plumage is generally of a reddish brown, streaked with dark brown.

Hegel, Georg Wilhelm Friedrich, a German metaphysician; born in Stuttgart in 1770. He was professor successively at Jena, Heidelberg, and Berlin. He was at first the disciple of Schelling, with whom he was associated in the conduct of a philosophical journal in 1802–1803. But his opinions gradually took a different turn. He rejected Schelling's intellectual intuition as an unwarrantable assumption, though he continued to maintain its leading idea — the unity of the subjective or ideal, and the objective or real; and in this idea endeavored to establish that absolute cognition and absolute truth which alone, according to this school, can satisfy the demands of the philosophical spirit. Hegel seems not to have perfected his system; and as he had no power of exposition, or of lucid expression of his thoughts, it is impossible to give a clear view of his philosophy. Be this as it may, his system is at present the center of nearly all philosophical interest in Germany, chiefly from the widely discrepant deductions, political and religious, which his friends and enemies draw from it; some maintaining it to be favorable to the present order of things in Church and State, others founding on it conclusions at variance with all ordinary notions of religion or morality. He died in Berlin in 1831.

Hegira, Hejra, or **Hijra,** an Arab word which means "going away," the term commonly used to indicate Mohammed's flight from Mecca, Sept. 13, 622 A. D. In 639 or 640 the Caliph Omar instituted a new Moslem calendar, to begin with the first day of the first month of the year in which the flight took place.

Heiberg, Johann Ludvig, a Danish poet and critic, son of Peter Andreas; born in Copenhagen, Dec. 14, 1791. He was known as a sound critic and a graceful essayist, and was long the undisputed law-giver of the Danish Parnassus. He died in Bonderup, Seeland, Aug. 25, 1860.

Heidelberg, a town of Baden; on the left bank of the Neckar. The principal buildings are: The church of St. Peter; the church of the Holy Ghost; the castle, anciently the residence of the Electors Palatine; Heidelberg University; the town house, etc. The castle, begun in the end of the 13th century, and exhibiting elaborate examples of early and late Renaissance architecture, is the most remarkable edifice in Heidelberg. It is now an ivy-clad ruin, but is carefully preserved from further decay.

Heidelberg University, a coeducational institution in Tiffin, O.; founded in 1850 under the auspices of the Reformed Church in the United States.

Heidelberg University, a renowned institution in Heidelberg, Germany. It was founded by the Elector Rupert I. in 1386, and continued to flourish till the period of the Thirty Years' War, when it began to decline. In 1802, however, when the town with the surrounding territory was assigned to the Grand-duke of Baden, a new era commenced for the university, and it rapidly became famous. It comprises faculties of theology, law, medicine, and philosophy, and in 1900 reported 149 professors and instructors, 1,462 students, and 500,000 volumes and 4,700 MSS. in its library. Many of the most famous German scholars have been professors here. The quincentenary of the university was celebrated with elaborate ceremonial in 1886.

Heilprin, Angelo, an American naturalist; born in Satoralja-Ujhely, Hungary, March 31, 1853; son of Michael Heilprin; came to the United States in 1856; was educated in Europe; Professor of Invertebrate Palæontology and Geology, 1880–1900; and executive curator, 1883–1892, in Academy of Natural Sciences, Philadelphia, Pa.; Professor of Geology in Wagner Free Institute, 1885–1890; president for five years of the Geographical Society, Philadelphia; leader of the Peary Relief Expedition in 1892. Immediately after the terrible eruption of Mont Pelee, Island of Martinique, on May 8, 1902, he started for the scene of the disaster, as representative of the National Geographical Society, and on May 31, amid a shower of mud and ashes, ascended to the summit of the volcano.

Heilprin, Michael, an American scholar; born in Piotrkow, Poland, in 1823; joined the Hungarians in 1848 and belonged to the literary bureau of the interior in 1849; came to the United States in 1856, and contributed to various literary journals. He published "The Historical Poetry of the Ancient Hebrews." His interest in Russian-Jewish emigrants led to the establishment of several agricultural colonies in the United States. He died in Summit, N. J., May 10, 1888.

Heine, Heinrich, a German poet and author; born of Jewish parents in Dusseldorf, Dec. 13, 1799. He studied law at Bonn, Berlin, and Gottingen; took his degree at the last mentioned place, and in 1825 embraced Christianity. In 1830 he settled in Paris, supported himself by his literary labors, and dwelt there till his death. From 1837 to the overthrow of Louis Philippe in 1848 he enjoyed a pension of $960 from the French government. As a poet Heine is remarkable for the simplicity and pathos of many of his lyric pieces. During the latter years of his life he suffered great agony from a spinal complaint which confined him almost constantly to bed. He died in Paris, Feb. 17, 1856.

Heintzelman, Samuel Peter, an American military officer; born in Manheim, Pa., Sept. 30, 1805; was graduated at the United States Military Academy in 1826, and served during the Mexican War. In 1861 he commanded a division at Bull Run, July 21, where he was wounded. Afterward he was promoted Brigadier-General of volunteers. His corps formed the right wing of Pope's army at the second battle of Bull Run, Aug. 30, 1862. During the Maryland campaign he commanded the defenses at Washington, and was afterward appointed to the command of the Department of Washington, and of the 22d Army Corps, which he held during the battles of Chancellorsville and Gettysburg, in May and July, 1863. He retired in 1869, with the rank of Major-General U. S. A. He died in Washington, D. C., May 1, 1880.

Heir, one who is born or begotten in lawful wedlock, and on whom the law casts the estate, in lands, tenements, or hereditaments immediately on the death of his ancestor.

Helbeh, the seed of a plant, with a somewhat bitter taste, whose flour, mixed with dhurra, is used as food by the laborers of Egypt.

Helen, in classic fable, the daughter of Jupiter and Leda, of Jupiter and Nemesis, or of the King Tyndareus and Leda, his wife, according to the various statements of the poets, was the most beautiful woman of her time, and married Menelaus, King of Sparta. Her guilty elopement with Paris, one of the sons of Priam, King of Troy, who had been sent to Lacedæmon as ambassador, led to the Trojan War, and the destruction, after 10 years' siege, of Troy. On the death of Paris she married his brother Deiphobus, and when the city was at last sacked, returned to Sparta with her husband Menelaus. Being banished from Sparta on the death of Menelaus, she retired to the island of Rhodes, where, having excited the envy of Polyxo, the queen of the isle, she was tied to a tree and strangled.

Helena, St., an island in the South Atlantic, belonging to Great Britain. Its position in the ocean thoroughfare from Europe to the East has made it a place of call for vessels, while it has acquired special celebrity as the place of Napoleon's banishment, and where he resided from 1816 till his death in 1821. In 1900 it was selected as a place of imprisonment for captured Boer commanders.

Helena, The, a twin-screw, steel, light draft gunboat of the United States navy.

Heliac, or **Heliacal,** in astronomy, a term meaning closely connected with the sun, rising just before the sun, a term used when a star rises just before the sun. As the sun moves in its orbit, a particular star which had for some time risen after the sun or with him, remaining however invisible, owing to his beams, will at length rise a sufficient length of time before him to be seen. When it does so, this is called its heliacal rising, or it is said to rise heliacally.

Heligoland, or **Helgoland,** a small island in the North Sea, formerly belonging to Great Britain. It is about 1 mile long from N. to S., and 1-3 of a mile from E. to W.; 1-5 of a square mile in superficial area, and about 2 2-3 miles in circumference. Heligoland has an important strategic position, is well fortified, and has cable communication with Cuxhaven and Wilhelmshaven. Taken from the Danes in 1807, it was ceded formally to Great Britain in 1814, but was transferred to Germany in 1890. Pop. 2,225.

Heliograph, an instrument constructed by De la Rue for obtaining photographs of the sun. Also an apparatus invented by H. C. Mance for telegraphing by means of the sun's rays.

Heliometer, an instrument for measuring the apparent magnitude of the sun. Also an instrument for ascertaining the solar time in all latitudes, and for ascertaining the latitude when the apparatus is set at noon according to the date. Also for ascertaining the date and length of day, sunrise and sunset, other conditions being established. Also, the differences of time between two places, the position of the earth's axis in relation to the level at the point of observation, etc.

Helios, the Greek name of the sun (the Roman Sol), who was worshiped as a god. His worship was widely spread. He had temples in Corinth, Argos, Trœzene, Elis, and many other cities, but his principal seat was Rhodes, where four horses were annually sacrificed to him. It was customary to offer up white lambs or boars on his altars. The animals sacred to him were horses, wolves, cocks, and eagles.

Helioscope, an instrument for viewing the sun. Stained glass is a simple helioscope. Also a form of reflecting telescope for viewing the sun. It has the object mirror in the form of a double concave lens, with the anterior surface worked into a paraboloid of the proper focal length.

Heliostat, a mirror provided with a clockwork motion, so adjusted as to make it follow the course of the sun, which, therefore, till the day departs, continues to be reflected from its face. Also an instrument invented by Gauss, in 1821, by means of which the rays of the sun can be flashed to great distances. It consists of an adjustable mirror or reflector, worked in connection with a combination of telescopes, and is now used in all trigonometrical surveys. By its aid, triangles, with sides over 100 miles in length, can be measured.

Heliotrope, a genus of plants. Many of the species have fragrant flowers. The Peruvian heliotrope, a shrub with oblong-lanceolate wrinkled leaves and small lilac-blue flowers, is in almost universal cultivation for its fragrance. Many beautiful varieties of this species are cultivated in gardens. The common heliotrope is an annual with small white, or rarely pale red, flowers. Large quantities of the flowers are used by perfumers for making scents.

Heliotrope, or **Bloodstone,** a variety of chalcedony or of jasper, of a green color with red spots. The finest heliotropes consist of chalcedony, and are translucent, at least at the edges; the jasper bloodstones are opaque. It was much used in the early ages of the Christian Church for the engraving of sacred subjects, the figures being so managed that the red spots should represent drops of blood.

Heliotype, in photography, a method of transferring pictures from negatives to a hardened gelatin film from which impressions are made in the same way as from a lithographic stone.

Helium, in chemistry, an element first discovered in the sun by means of the spectroscope, and so named because it was supposed to be peculiar to that body. It has since, however, been chemically discovered on the earth along with argon.

Hell, a place of punishment, found with more or less distinctness, in nearly all ethnic forms of religions, the precise nature of the punishment varying widely.

Hellas, the original home of the Hellenes, according to the received opinion, was first a town, and afterward under the name of Phthiotis, a well-known district of Thessaly. The ancients, also, sometimes applied this name to the whole of Thessaly. With the spread of the Hellenic people S., the term embraced a gradually increasing territory, till it came to denote the whole of Middle Greece, or Greece Proper (modern Livadia). At a still later period, the Peloponnesus itself was included under the designation; and, finally, Hellas came to be used, in the broadest sense, as comprehending the whole of Greece, with its islands and colonies. The Hellenes, or Greeks, as distinguished from the more ancient Pelasgians, received this name in the belief that they were descended from a certain mythical Hellen.

Hellebore, in pharmacy, the dried rhizome of Veratrum viride, growing in swampy districts of the United States. It has a peculiar acrid taste.

Hellen, in Greek mythology, son of Deucalion and Pyrrha, and founder, by his three sons Dorus, Æolus, and Xuthus, of the four great branches of the Greek people or Hellenes.

Hellenes, the native name of the ancient Greeks.

Hellenist, the follower of the Greeks in language, manners, etc.; a Grecian Jew. Also a Grecian; one versed in the Greek language. Also, in the plural, the name given to those Jews who, from their foreign birth or travel, used the Greek (Hellenic) language, and who are distinguished under this appellation in the Acts of the Apostles.

Hell Gate, a formerly dangerous pass in the East river, at New York city. Rocks here used to form an obstruction much dreaded by mariners, but by extensive submarine mining operations and the use of the most powerful explosives the passage has been cleared.

Helmet, a piece of defensive armor for the head; a defensive covering for the head. It was originally made of leather, and afterward strengthened by the addition of bronze and other metals, till finally it was constructed entirely of metal, lined with felt or wadding. In the Middle Ages helmets were frequently inlaid with gold, and provided with bars and movable flaps to cover the face in battle, and to be opened at other times. In the United States helmets are worn by firemen to protect them from falling pieces of burning wood, when extinguishing fires. In tropical countries helmets are made of soft white felt, wrapped round with folds of linen, to protect the head of the wearer from the heat of the sun.

Helmholtz, Hermann-Ludwig Ferdinand, a German physicist; born in Potsdam in 1821. His work has been chiefly in those departments of physics which are in closest relation with physiology, notably in acoustics and optics. He was ennobled by the German emperor in 1883. He died in 1894.

Heloderma, a Mexican genus of lizards, of which one species at least has been proven to be venomous, all its teeth being furnished with poison glands. It is about three feet in length, has a thick and squat body covered with rough scales, forms burrows under the roots of trees, is nocturnal in habit, and is said to feed on insects, worms, millepeds, etc.

Helots, slaves in ancient Sparta. They were the property of the State, which alone had the disposal of their life and freedom, and which assigned them to certain citizens, by whom they were employed in private labors. Agriculture and all mechanical arts at Sparta were in their hands, and they were also obliged to bear arms for the State in case of necessity. They behaved with great bravery in the Peloponnesian war, and were rewarded with liberty (431 B. C.), but 2,000 appear to have been subsequently secretly massacred. They several times rose against their masters, but were always and finally reduced.

Helper, Hinton Rowen, an American author; born near Mocksville, N. C., Dec. 27, 1829. In 1857 appeared the notable work "The Impending Crisis of the South," which the Republican party used as a campaign document with great effect. In more recent years he wrote other books of less consequence.

Helps, Sir Arthur, an English historian; born in Streatham, Surrey, July 10, 1813; was graduated at Cambridge in 1835. His works include the "Spanish Conquest of America," and lives of "Pizarro" and "Cortes." He died in London, March 7, 1875.

Helst, Bartholomæus van der, a Dutch painter; born (according to tradition) in Haarlem in 1613. He was joint founder in 1654 of the painters' guild of St. Luke at Amsterdam. He attained great celebrity as a portrait-painter. One of his works at Amsterdam, a "Muster of the Burgher Guard," with 30 full length figures, was pronounced by Sir Joshua Reynolds to be "the first picture of portraits in the world." He died in 1670.

Helvetii, a Celtic people, inhabiting, according to Cæsar, the region between the mountains of Jura on the W., the Rhone on the S., and the Rhine on the E. and N., the region corresponding pretty closely with the W. part of modern Switzerland. Their chief town was Aventicum. They are first mentioned in the war with the

Cimbri, but the chief event in their history is their attempted irruption into and conquest of Southern Gaul, in which they were repulsed by Cæsar with frightful slaughter, 58 B. C.

Hemans, Felicia Dorothea, an English poet; born in Liverpool, Sept. 25, 1793. She displayed the bent of her genius when a mere child, and wrote some tolerable poetry in her ninth year. She first appeared as an author in 1808, in a volume entitled "Early Blossoms," but it was subjected to harsh criticism, which she took very seriously to heart. A second volume, published in 1812 under the name of "The Domestic Affections," was much more successful. The same year she married Captain Hemans. His health had suffered much during the retreat of Sir John Moore, and afterward at Walcheren; and shortly before the birth of her fifth son he left her on the alleged ground of seeking a more congenial clime in Italy, and though he lived long after never saw her again. The marriage had evidently proved unhappy. Thus abandoned, she resumed her literary pursuits with increased ardor, made herself acquainted with Latin and various modern languages, delighting especially in the poetic literature of Germany, and wrote much both in separate works and in the periodicals of the time. In 1834 she took scarlet fever, succeeded, in consequence of having caught cold, first by ague and finally by dropsy, which caused her death May 16, 1835. Her poetry is essentially lyrical and descriptive, and is always sweet, natural, and pleasing. In her earlier pieces she was imitative, but she ultimately asserted her independence and produced many short poems of great beauty and pathos and evidently destined to live. Her "Graves of a Household" is one of the sweetest poems in the language.

Hematine, or **Hæmatine,** the red coloring matter of the blood, occurring in solution in the interior of the blood corpuscles or cells. It is the only structure of the body, except hair, which contains iron.

Hemlock, a poisonous plant. It is a tall, erect, branching biennial, with a smooth, shining, hollow stem, usually marked with purplish spots, elegant, much-divided leaves, which when bruised emit a nauseous odor, and white flowers in compound umbels of 10 or more rays, surrounded by a general involucre of three to seven leaflets. It is common in the United States and is found throughout Europe and temperate Asia in waste places, banks, and under walls. It is said to be fatal to cows when they eat it, but that horses, goats, and sheep may feed upon it without danger. In the human subject it causes paralysis, convulsions, and death. The poison administered to Socrates is supposed to have been a decoction of it, though others are of opinion that the potion was obtained from water-hemlock.

Hemlock, or **Hemlock Spruce,** a name given to an American fir from its branches resembling in tenuity and position the common hemlock.

Hemp, an annual herbaceous plant; It is a native of Western and Central Asia, but long naturalized in other countries. The Indian variety is the source of the narcotic drug variously known as hashish, bhang, or gunjah. The hemp fiber is tough and strong, and peculiarly adapted for weaving into coarse fabrics such as sail-cloth, and for twisting into ropes and cables. Immense quantities are exported from Russia. In some of the United States it is a crop of considerable importance. Hempseed is much used as food for cage-birds, and also yields an oil. Sisal hemp or (henequen) and Manilla hemp are not true hemps.

The United States imports $500,000 worth of hemp yearly from Italy and Russia. The best comes from Italy. In favorable soils from 1,700 to 2,000 pounds an acre are produced. Raw hemp grown in Japan is sold in ribbons, thin as paper and glossy as satin, the frayed ends showing fibers of exceeding thinness.

Hemp Palm, a Chinese and Japanese species of palm of the fibers of whose leaves cordage is made, while hats and even cloaks are made from the leaves themselves.

Henderson, David Bremner, an American statesman; born in Old Deer, Scotland, March 14, 1840; was brought to the United States when a boy and educated in the public schools. He entered the Union army as a private in 1861, and became a colonel of volunteers in 1864. He was admitted to the bar in 1865; was first elected to Congress in 1882, where for 10 years he was a member of the Committee on Appropriations; and in the 54th and 55th Congresses was respectively Chairman of the Committee of Judiciary, and a member of the Committee on Rules. On Dec. 4, 1899, he was elected Speaker of the House of Representatives, to succeed Thomas B. Reed, and in 1901 he was reëlected, retiring in 1903.

Henderson, William James, an American musical critic; born in Newark, N. J., Dec. 4, 1855; was connected with the New York "Times," and wrote several useful books on music and other subjects.

Hendricks, Thomas Andrews, Vice-President of the United States; born near Zanesville, O., Sept. 7, 1819; was graduated at South Hanover College, Indiana, in 1841; went to Chambersburg, Pa., studied law in the office of his uncle and was admitted to the bar in 1843. In 1845 he was sent to the Legislature, and in 1850 and 1852 was elected to Congress. In 1860 he was the Democratic candidate for governor of Indiana, but was defeated by Henry S. Lane. In 1863–1869 he was a United States Senator; and at the Democratic National Convention of 1868, received 132 votes (second highest) for the presidential nomination. In the same year he was again defeated for the governorship of Indiana, but in 1872 was elected. In the Democratic National Convention of 1876 he received 133½ votes for the presidential nomination, and a practically unanimous vote for the vice-presidential. The Democratic ticket, headed by Tilden, was, however, defeated. In 1884 Hendricks was again nominated for the vice-presidency, and this time the Democrats were victorious, and Cleveland and Hendricks were elected. He died in Indianapolis, Ind., Nov. 25, 1885.

Hengist, a prince of the Jutes, founder of the Kingdom of Kent in Great Britain, in conjunction with his brother Horsa. In 449 the Britons sued for aid from the Saxons against the inroads of the Scots and Picts. The Saxons under Hengist and Horsa accordingly landed at the mouth of the Thames, and defeated the northern tribes near Stamford in 450 A. D. Being reinforced from home they afterward united with the Scots and Picts against the Britons, whom they ultimately dispossessed. Hengist, who had lost his brother in the battle near Eglesford (now Ailsford) in A. D. 445, founded the Kingdom of Kent, established his residence in Canterbury, and died about the year 488. By some recent writers the brothers are, with insufficient reason, regarded as mythical personages.

Heng-kiang, a river of China, falling from the N. W. into the Yang-tse-kiang. In its course of 300 miles it has several large cities on its banks.

Henna, a shrub bearing opposite entire leaves and numerous small, white fragrant flowers disposed in terminal panicles. It grows in moist situations throughout North Africa, Arabia, Persia, and the East Indies and has acquired celebrity from being used by the inhabitants of those countries to dye yellow the nails of their fingers and the manes, hoofs, etc., of their horses.

Hennepin, Louis, a French recollet friar, missionary, and traveler in North America; born in Flanders about 1640. At length he embarked for Canada and arrived at Quebec in 1675. Between that period and 1682 he explored the regions afterward called Louisiana, and returning to Europe, published an account of his researches. The geographical portions of his works are feeble but they present much interest as descriptions of the manners of the aboriginal races which the author visited. He died in Utrecht about 1706.

Henningsen, Charles Frederick, an American military officer; born in England in 1815. During the American Civil War he served in the Confederate army, becoming a Brigadier-General. He directed the construction of the first Minie rifles manufactured in the United States. He died in Washington, D. C., June 14, 1877.

Hennessy, John, an American clergyman; born in Ireland, Aug. 20, 1825; and came to the United States in 1847. He was made Bishop of Dubuque; and Archbishop in 1893. He died in Dubuque, Ia., March 4. 1900.

Henrietta, Maria, queen of Charles I. of England; youngest child of Henry IV., of France, by his second wife, Maria de' Medici; born in Paris in 1609. The marriage with Charles I. was celebrated by proxy at Paris in 1625, but her first popularity in England was soon destroyed by her bigotry, hauteur, and despotic ideas as to divine right. Much of the subsequent procedure which brought Charles to the block may be traced indirectly to her influence. On the breaking out of civil war she proceeded to Holland, procured money and troops, and afterward joined Charles at Oxford. She again went to the Continent in 1644, and resided in France till the Restoration. On that occasion she visited England, but soon returned to France, and died near Paris in 1669.

Henry I., surnamed Beauclerc ("fine scholar"), youngest son of William the Conqueror; born in Selby in Yorkshire, in 1068. He was hunting with William Rufus when that prince was killed, in 1100, and instantly riding to London, caused himself to be proclaimed king, to the prejudice of his elder brother Robert, then absent as a Crusader. He reëstablished by charter the laws of Edward the Confessor, recalled Anselm to the primacy, and married Matilda, daughter of Malcolm III. of Scotland, thus conciliating in turn the people, the Church, and the Scots. Robert landed an army, but was pacified with a pension, and the promise of succession in event of his brother's decease. Soon after, however, Henry invaded Normandy, took Robert prisoner in 1106, and reduced the duchy. He was successful also in the struggle with France. The last years of his reign were very troubled. Henry died in Rouen in 1135, and was succeeded by Stephen.

Henry V. (surnamed Monmouth), one of the most illustrious of the line of English sovereigns, and whose early life of riot and dissipation gave but little promise of his after virtues; born in 1388, ascended the throne on the death of his father, Henry IV. In obedience to the dying advice of his parent, to give the public mind employment, he declared war against France, laying claim to that throne in right of his ancestors, and at once led a powerful army to the invasion of that kingdom; and after taking Harfleur and devastating the northern provinces, fought and won the glorious battle of Agincourt. To check Henry's further progress and avert the total ruin of his country, the French monarch concluded a truce with Henry, who, to ratify the arrangement, espoused Charles' daughter, the Princess Catharine. No king ever sat on the English throne who was more beloved and honored than the gallant "Harry Monmouth." He died in 1422.

Henry VI., the only son of the above; born 1421, was but ten months old at the death of his father, and was proclaimed king on the day after that event. His grandfather, Charles VI., King of France, died soon after, and the Duke of Orleans assumed the title of king by the name of Charles VII. This renewed the war between England and France, and the English, for a while, were successful. Henry was crowned at Paris, and the great Duke of Bedford, his guardian, obtained several important victories. But the raising of the siege of Orleans by Joan of Arc gave a new turn to affairs, and the English power declined, and was, in the end, quite subverted. The death of the Duke of Bedford was a fatal blow to the cause of Henry; and, to add to his misfortunes, the York party in England grew strong, and involved the country in a civil war. They adopted the white rose as their badge of distinction, and the Lancastrians the red. Hence the title given to the struggle — "the War of the Roses." After various contests, the king was defeated and sent to the Tower, where it is believed, he was slain by Richard, Duke of Gloucester. He was found dead in the Tower in 1471.

Henry VII. (Tudor), son of Edmund, Earl of Richmond, and of Margaret, of the house of Lancaster, born in 1456. By the assistance of the Duke of Brittany, he landed in Wales with some troops, and laid claim to the crown in 1485. The people, disgusted at the cruelties of Richard III., joined him in such numbers that he was enabled to give the usurper battle at Bosworth Field, where Richard was slain, and Henry crowned on the spot. He united the houses of York and Lancaster by marrying Elizabeth, daughter of Edward IV. Henry reigned

24 years, and greatly increased trade and commerce; but his avarice was excessive. He died in 1509.

Henry VIII., born in 1491; succeeded his father, Henry VII., at the age of 19. The first years of his reign were auspicious owing to his generosity; but at length his conduct grew capricious and arbitrary. The Emperor Maximilian and Pope Julius II., having leagued against France, persuaded Henry to join them, and he, in consequence, invaded that kingdom, where he made some conquests. About the same time, James IV., King of Scotland, invaded England, but was defeated and slain at Flodden Field. Cardinal Wolsey succeeded in bringing Henry over from the imperial interests to those of the French king. When Luther commenced his reformation in Germany, Henry wrote a book against him, for which he was complimented by the Pope with the title of "Defender of the Faith." But this attachment to the Roman see did not last long; for, having conceived an affection for Anne Boleyn, he determined to divorce his wife, Catharine of Aragon, to whom he had been married 18 years. His plea for the divorce was that Catharine was his brother Arthur's widow. The divorce being refused by the Pope, Henry assumed the title of Supreme Head of the English Church, put down the monasteries, and alienated their possessions to secular purposes. His marriage with Anne Boleyn followed; but he afterward sent her to the scaffold, and married Lady Jane Seymour, who died in childbed. He next married Anne of Cleves; but she not proving agreeable to his expectations, he put her away, and caused Cromwell, Earl of Essex, the projector of the match, to be beheaded. His next wife was Catharine Howard, who was beheaded for adultery; after which he espoused Catharine Parr, who survived him. He was a man of strong passions and considerable learning. The historian Froude has vindicated his memory in many respects. He died in 1547.

Henry IV. (Quatre), called The Great, King of France and Navarre; born in 1553 in Pau, in Bearn. In 1589, on the assassination of Henry III., Henry of Navarre succeeded to the throne. He had previously embraced the Protestant faith, but after a protracted and obstinate struggle, convinced that he should never enjoy quiet possession of the French throne, without professing the Catholic faith, Henry at length yielded to the wishes of his friends, was instructed in the doctrines of the Roman Church, and professed the Catholic faith, July 25, 1593, in the Church of St. Denis. He happily escaped an attempt to assassinate him; was solemnly anointed king at Chartres in 1594; and entered the capital amid the acclamations of the people. Henry made use of the tranquillity which followed to restore the internal prosperity of his kingdom, and particularly the wasted finances; and in this design he was highly successful, with the aid of his prime minister, Sully. To his former brothers in faith and in arms, the Protestants, he granted a certain measure of religious freedom and political security by the edict of Nantes, in 1598. In 1610, while riding through the streets of Paris, his coach was obstructed in the Rue de la Feronnerie by two wagons. A fanatic named Ravaillac took advantage of the moment to perpetrate a long meditated deed; and the king received a fatal stab from the hand of this assassin, in the 52d year of his age and 22d of his reign.

Henry IV., Emperor of Germany, born in 1050, and at the death of his father, Emperor Henry III., was only five years old. His mother, Agnes, was made regent, and on her death the chief power was seized by his uncles, the Dukes of Saxony and Bavaria. Henry made war on them and threw off their yoke. He, however, offended his subjects by the licentiousness of his manners, and quarreled with the Pope, Gregory VII., about investitures. The latter being appealed to in a subsequent dispute between Henry and the Duke of Saxony, cited Henry to his tribunal, who then deposed the Pope, to be in turn excommunicated by him. The emperor was compelled to submit, went to Canossa, where the Pope then was, and after being kept three days in the courtyard, received absolution. The quarrel was soon renewed, deposition, excommunication, and election of new popes and emperors followed. Henry's eldest son, Conrad, rebelled against him, but was overcome, and died in Florence in 1101. He then caused his second son, Henry, to be elected his successor, and crowned; but the latter also rebelled, and making himself master of his father's person, in 1106, by stratagem, compelled him to abdicate the throne. Henry IV. died in 1106.

Henry V., the son and successor of the preceding; born in 1081. In 1106 he rebelled against his father and dethroned him, assuming the imperial crown in his stead. In 1111 he married Matilda, the daughter of Henry I., King of England; and the rich dowry he received with his princess gave him the means of undertaking an expedition to demand the imperial crown from the Pope. Finding that Pascal refused to crown him, Henry caused the Pope to be conveyed away from the altar while at mass; and cut down, in the streets of Rome, all who opposed him. At length the Pope yielded, and Henry was crowned in 1112, without making any new concessions. Soon after his return to Germany the Pope excommunicated him; which led to a new war, the invasion of Italy, and the election of a rival Pope. Peace was not made till 1122, when the emperor renounced his claims. He died in 1125.

Henry, Prince of Prussia, a German naval officer; born in Berlin, Aug. 14, 1862; brother of Emperor William; married Princess Irene, daughter of the late Grand-duke Ludwig IV. of Hesse, May 24, 1888; was appointed to succeed Vice Admiral von Diederichs in command of the German fleet in Chinese waters, in March, 1899. Early in January, 1902, Emperor William requested President Roosevelt's permission for his daughter, Alice, to christen the Emperor's new yacht building in the United States. Later in the same month, after receiving the consent of President Roosevelt, the Emperor telegraphed an expression of his gratification, and informed the President that he had ordered his yacht, the "Hohenzollern," to be present at the ceremony, and had appointed his brother, Admiral Prince Henry of Prussia, to represent him on the occasion. Prince Henry arrived in New York city on Feb. 23 and left on March 12. He was the recipient of hearty national, municipal, and social honors, and won the esteem of the American people by his cordiality.

Henry, surnamed The Navigator, a Portuguese prince; born in Oporto in 1394. The ambition of Henry was the discovery of unknown regions of the world. At Sagres he erected an observatory, to which he attached a school for the instruction of youthful scions of the nobility in the sciences necessary to navigation. Subsequently he dispatched some of his pupils on voyages of discovery, which resulted at last in the discovery of the Madeira Islands in 1418. Henry's thoughts were now directed toward the auriferous coasts of Guinea, of which he had heard from the Moors; and in 1433 one of his mariners sailed round Cape Nun, till then regarded as the farthest point of the earth, and took possession of the coasts as far S. as Cape Bojador. Next year Henry sent out a larger ship, which reached a point 120 miles beyond Cape Bojador; and at last, in 1440, Cape Blanco was reached. Henry died in 1460.

Henry of Huntingdon, an English chronicler; was brought up in the household of the Bishop of Lincoln, and about 1120 became Archdeacon of Huntingdon. His great work is a "History of the English."

Henry, Joseph, an American physicist; born in Washington, D. C., Dec. 17, 1797; received a common school education; later turned his attention to the study of science; discovered how to produce the electromagnet, about 1827; and afterward greatly improved it. He built the first electro-magnetic telegraph, about a mile long, in 1830; designed the first electro-magnetic engine in 1831; was connected with the Smithsonian Institution in 1846–1878; was twice offered the presidency of Princeton College, and had other tempting offers to leave Washington, but refused them all to give his time to the equipment and care of the Smithsonian Institution. He was the author of "Syllabus of Lectures on Physics" (1844), and of more than 150 papers on scientific subjects. He died in Washington, D. C., May 17, 1878.

Henry, Patrick, an American patriot; born in Hanover co., Va., May 29, 1736. He entered business and married at 18. Having failed successively in "store-keeping" and in farming, he became a lawyer in 1760, and three years later found his opportunity, when, having been employed to plead the cause of the people against an unpopular tax, his great eloquence seemed suddenly to develop itself. This defense placed him at once in the front rank of American orators, and his later speeches advanced him to their head. Throughout the Revolutionary War he was a zealous patriot. He was a delegate to the 1st Continental Congress, which met in Philadelphia in 1774, and delivered the first speech in that assembly — a speech that for fiery eloquence and lofty tone was worthy of so momentous a meeting. In 1776 he carried the vote of the Virginia convention for independence; and in the same year he became governor of the new State. He was afterward four times reëlected. In 1791 he retired from public life, and returned to his practice; in 1795 he declined the secretaryship of State offered him by Washington. He died June 6, 1799.

Henry College, a coeducational, non-sectarian institution in Campbell, Tex.; founded in 1892.

Henry Documents, a series of papers bearing on early American history. Sir James H. Craig, the governor of British North America, in January, 1809, sent an adventurer, John Henry by name, into the New England States to report the feeling of that section of the country on the question of secession from the Union, and possibly to increase the discontent already caused among these people of commercial interests by the Embargo Act and the Non-Intercourse system of the government. Failing of the reward he sought from the British ministry, Henry sold to President Madison for $50,000 his correspondence with the English officials, and these papers became known as the Henry documents. Madison submitted the letters to Congress and claimed that they proved a design on the part of England to annex the New England States.

Henry, Fort, a defensive work on the Tennessee river, about 8 miles W. of Fort Donelson. It surrendered to General Grant and Commodore Foote, Feb. 6, 1862.

Hephæstus, the god of fire and of smithying among the Greeks, is represented by Homer as lame, walking with the aid of a stick, and panting as he goes.

Heptarchy, the name sometimes applied to the seven kingdoms supposed to have been established by the Saxons in England. They were Wessex, Sussex, Kent, Essex, East Anglia, Mercia, and Northumbria.

Hepworth, George Hughes, an American clergyman; born in Boston, Feb. 4, 1833. He was a Unitarian and later a Presbyterian minister, finally occupying an editorial position on the staff of the New York "Herald." He died June 7, 1902.

Hera, an ancient Greek goddess, identified by the Romans with their Juno, the sister and wife of Zeus (Jupiter), and daughter of Kronos (Saturn) and Rhea. The poets represent Zeus as an unfaithful husband, and Hera as an obstinate and jealous wife, the result of which is frequent strife between them.

Heraclidæ, the descendants of Hercules, who, after his death, 1209 B. C., were expelled from the Peloponnesus, and took refuge in Attica. The return of the Heraclidæ, or the Dorian Migration, 1104 B. C., forms a celebrated epoch in ancient chronology, as marking the transition from the heroic or fabulous ages to the period of authentic history.

Herald, title of certain officers in England who have charge of the records of the nobility, award the insignia of the various orders to the persons upon whom royalty has conferred the dignities, and collect fees from those who are thus honored. Heralds are appointed in England by the earl marshal whose office is hereditary.

Heraldry, properly the knowledge of the whole multifarious duties devolving on a herald; in the more restricted sense it is the science of armorial bearings. In England it is still of some importance, but in America it is generally ridiculed, there being no law to bar people from having any design they please on their belongings, provided they do not pose as policemen or other public officers. Americans interested in coats-of-arms should address the College of Heralds, London, England. The college is entitled to large fees for services.

Herat, a city of Afghanistan, and capital of an independent state; in a plain near the Herirood river, 360 miles W. by N. of Kabul. Herat is the emporium of the commerce carried on between Kabul and Bokhara, Hindustan, and Persia, and is a grand central mart for the products of India, China, Tartary, Afghanistan, and Persia. This place has often been ravaged by various conquerors, disputing the empire of Asia. The position of Herat is one of the greatest possible importance, and has been well described as the "Gate of India"; for within the limits of the Heratee country all the great roads leading to India converge. Pop. (1902) est. 50,000.

Herbaceous Plants, perennial plants of which the stem perishes annually, while the roots remain permanent and send forth a new stem in the following season.

Herbal, originally a book containing an account of all known plants with their medicinal properties; now a book containing descriptions only of those plants which possess medicinal properties.

Herbarium, or **Hortus Siccus** ("dry garden"), a collection of specimens of dried plants, intended for the future study and examination of botanists.

Herbert, the name of a famous British family. Herbert Fitz-Herbert was chamberlain and treasurer to King Henry I. In the reign of Henry V. Sir William Herbert of Raglan Castle, County Monmouth, received the honor of knighthood. His eldest son, a staunch adherent of the House of York, was created Earl of Pembroke by Edward IV. in 1468. His son became Earl of Huntingdon. The title of Earl of Pembroke was restored to the Herberts in 1551. The new earl was one of the most influential noblemen of his age, and one who took an active part in public affairs, both as a statesman and a soldier. By his wife, who was a sister of Catharine Parr (the last queen of Henry VIII.), he had a son Henry, second earl, to whose countess, Mary ("Sidney's sister, Pembroke's mother"), Sir Philip Sidney dedicated his "Arcadia."

Herbert, Henry William (pen name, Frank Forester), an American author; born in London, England, April 7, 1807. He was graduated at Oxford, and came to the United States in 1830, rising to eminence as a writer and scholar of decided versatility. He died in New York city, May 17, 1858.

Herbert, Hilary Abner, an American lawyer; born in Laurensville, S. C., March 12, 1834. He was educated in the universities of Alabama and Virginia, studied law and was admitted to the bar. He entered the Confederate service as captain, was promoted to the colonelcy of the 8th Alabama volunteers and was disabled at the battle of the Wilderness, May 6, 1864. He continued the practice of law at Greenville, Ala., till 1872, when he removed to Montgomery. He was elected to Congress in 1877, and was reëlected seven times. He was, in March, 1893, appointed Secretary of the Navy by President Cleveland. In 1897 he began the practice of law in Washington.

Herbert, Michael Henry, an English diplomatist; born in England, June 25, 1857; entered the diplomatic service in 1877; went to Paris as attache in 1879; soon after was made second secretary; was sent to Washington as chargé d'affaires, where he remained a year; was secretary of the British Legation at Washington in 1892–1893; at The Hague in 1893–1894; and at Constantinople in 1894–1897. He was transferred to Rome in the latter year, and to Paris in 1898; and on June 4, 1902, was appointed British ambassador to the United States to succeed the late Lord Pauncefote. He died Sept. 30, 1903, at Davies-Platz, Switzerland, from consumption.

Herculaneum, an ancient city about 5 miles from Naples, completely buried with Pompeii by lava and ashes during an eruption of Vesuvius in the reign of Titus, A. D. 79. The site had been long sought in vain, when in 1713 three statues were found in digging a well at the village of Portici. In 1738 the well was dug deeper, and traces of buildings were found. The theater was then discovered, but though the excavations were continued for many years it is now the only building to be seen underground, as the successive excavations were immediately filled up with rubbish from a new digging. A number of public buildings and private dwellings were laid bare, and many objects of great value discovered, such as statues, busts, beautiful mosaics, wall paintings, and charred papyrus manuscripts. One of the houses discovered contained a quantity of provisions, consisting of fruits, corn, oil, pease, lentils, pies, and hams. Among the most interesting objects discovered here were the papyri, over 1,750 of which are now in the Naples Museum, but hardly a third have yet been unrolled, the process presenting great difficulties from the tendency of the MSS. to crumble.

Hercules, or **Heracles,** the beloved son of Zeus by Alcmene. Hercules was doomed to a life of trouble, and became the type among the Greeks not only of manly strength, but of manly endurance. Hercules undertook adventures on his own account, killing a sea monster that ravaged Troy, and destroying Troy when the mares promised him as reward for killing the monster were denied him. His love of horses also led him to kill Iphitus, though his guest. Finally, after death, he himself joined the banquet of the deathless gods, with Hebe as his wife; but his phantom, armed with bow and arrow and gold baldric, with wild boars and lions wrought upon it, terrified the dead in Hades.

Among the labors of Hercules were the destruction of the Nemean lion, of the Lernæan hydra, fetching the oxen of the triple-bodied Geryones, and the golden apples of the Hesperides; and freeing Prometheus from the eagle which tortured him; also the destruction of the Erymanthian boar, and of the Stymphalian birds; the capture of the Cretan bull, of the stag of Ceryneia, and of the horses of Diomedes; the cleansing of the stables of Augeas; and obtaining the girdle of the queen of the Amazons.

Hercules, Pillars of, a fanciful name given by the ancients to the two rocks forming the entrance of the Mediterranean at the Strait of Gibraltar. Their erection was ascribed by the Greeks to Hercules, on the occasion of his journey to the kingdom of Geryon.

Hercynian Forest, the general designation of the entire wooded mountain ranges of Middle Germany, from the Rhine to the Carpathian Mountains.

Herder, Johann Gottfried von, a German author; born in 1744. From 1764 to 1769 he was an assistant teacher at the cathedral school of Riga, with which office that of a preacher was connected, and it was during this period that he published his "Fragments on German Literature." His greatest work is his "Ideas on the Philosophy of the History of Man." He died in 1803.

Heredia, Jose Maria de, a French poet; born in Cuba, Nov. 22, 1842. He printed occasional poems, sonnets, etc., for private circulation, and though a Spaniard born he gradually came to be reckoned one of the most gifted and accomplished of French poets. He is now a naturalized French citizen.

Heredity, the transmission from parent to offspring of physical and intellectual characters. This has been at all times believed in, but it is only in recent times that the conviction has, in the hands of Darwin, Spencer, Haeckel, and Wallace, been methodized so as to embody an important zoölogical doctrine. The modern view of evolution in biology rests upon the belief that acquired peculiarities, or differences which may arise between parent and offspring, can be transmitted with some probability of permanence, especially if the variation presented by the young is determined by external conditions, or if it is such as to make the path of existence easier, and adapt the possessor more thoroughly to the conditions under which it is placed.

Hereford, the county town of Herefordshire, England, 144 miles W. N. W. of London. Its noble cathedral was built between 1079 and 1535, and so exhibits every variety of style from Norman to Perpendicular. Measuring 342 feet by 146 across the transept, it has a central tower 165 feet high. Nell Gwynn and Garrick were natives. It has stood many sieges from Stephen's time down to the Great Rebellion. Pop. 20,267.

Herefords (from the county of Herefordshire, England, where they were first reared), a breed of cattle having a dark red body with a white face and breast, and sometimes a line of white along the back. They have a thicker skin than the shorthorn, and long curly soft hair; the head is like that of a Devon, but larger, the muzzle coarser, and the throat more fleshy. Herefords are good grazing and working animals. They are very hardy, and excellent for the butcher, but are not useful as dairy animals.

Heresy, in ecclesiology and in church and civil history, the sense is religious error, departure from what is held to be true doctrine.

Heretic, one who adopts, and probably propagates, religious views which the Church to which he has belonged deems erroneous, and imperiling the eternal salvation of anyone holding them. Commonly speaking it is a term applied by the Roman Catholic Church to Christians, who do not accede to Roman Catholic doctrines. When the Church gained an influence over the civil power, it induced the latter to superadd civil to the ecclesiastical penalties for heresy. Those who differed from the opinions of the imperial house received many kinds of ill-usage, but it was not until A. D. 382 that a law of Theodosius I., directed against the Manichæans, authorized capital punishment for heresy. This law led to the execution at Treves, in A. D. 385, of Priscillian, Bishop of Avila.

In mediæval times it was supposed that the proper method of dealing with a heretic was to burn him alive, and accordingly there was a writ "De hæretico comburendo" (About burning a heretic), regarding which Blackstone says that it "is thought by some to be as ancient as the common law itself." The conviction of heresy by the common law, was however, by the archbishop in a provincial synod, and the delinquent was handed over to the civil power. During that part of the Reformation struggle in England in which the government was Roman Catholic, a heretic specially meant a Protestant; but by an act of Henry VIII. departure from the tenets of the Church of Rome was declared not to be heresy; an act of Elizabeth in name swept away the penal statutes against heretics, leaving them to be dealt with by ecclesiastical courts; but it was not till 1676 that an act of Charles II. actually removed the writ from the statute-book. The persecution of those who differ from the prevalent religion of the state continued in one form or another down to very recent times, even in the more civilized countries, and still survives in Russia and parts of South America.

Heriot, George, a Scotch philanthropist; born in Scotland in 1563. He left nearly the whole of his fortune to found a hospital in Edinburgh for the maintenance and education of poor fatherless boys, freemen's sons, of the town. The present magnificent structure known as Heriot's Hospital was built between 1628 and 1659. He died in London, England, in February, 1623.

Heritage, in the Old Testament, the taking of anything capable of being possessed; a possession. In the New Testament, those assigned by lot. The flock placed under one's pastoral charge.

Herkimer, Fort, a fort built near the site of the present town of Herkimer, N. Y., during the Old French or Seven Years' War, and known during the Revolution as Fort Dayton.

Herkimer, Nicholas, an American military officer; born about 1715 of German parents. At the age of 30 he was lieutenant of militia, and was in command at Fort Herkimer, N. Y., when the Indians attacked it in 1758. He later became colonel and Brigadier-General of the New York militia. He joined the patriots of the Revolutionary War, and, owing to his popularity and force, was a powerful element in determining the success of the Revolution in his own State. His most noteworthy feat was the relief of Fort Schuyler when invested by Colonel St. Leger after the battle of Ticonderoga. The British troops heard of Herkimer's approach and surprised him while on the march. The militia were outnumbered and at first driven back, but Herkimer, though severely wounded, rallied his men, and ultimately drove off the whole besieging force. Ten days later he died from his wounds. In 1777 Congress ordered a monument to his memory, but it was not till 1882 that it was finally erected by joint appropriations from Congress, the New York Legislature, and private subscriptions. It is an obelisk 85 feet high, faced with bronze memorial tablets. Herkimer county was also named from General Herkimer. He died in Danube, N. Y., Aug. 16, 1777.

Herkomer, Hubert, an English painter; born in Waal, Bavaria, May 26, 1849. At an early age he settled with his parents in the United States and subsequently in England. He joined the Institute of Painters in Water Colors in 1871. His oil picture, "After the Toil of Day," in the Academy exhibition of 1873, was followed by his "Last Muster," which gained him the "grand medal of honor" at the Paris Exhibition of 1878. He founded the Herkomer School of Art at Bushey in 1883.

Hermannstadt, a town of Hungary, formerly capital of Transylvania, 370 miles S. E. of Pest. It consists of an upper and a lower town, the walls, towers and bastions formerly surrounding which have only recently been demolished. Hermannstadt was originally the seat of a German colony, founded in the reign of Gesa II. (1141-1161), and was at first called Villa Hermanni. It endured several sieges from the Turks (1438 and 1442), as well as one from the followers of John Zapolya (1526). It also suffered at the hands of Gabriel Bathori in 1610, and again from both combatants during the Russo-Hungarian War of 1849. Pop. 21,465.

Hermaphrodite, in zoölogy, an animal having combined in itself the characteristics of the two sexes. In botany, possessing both stamens and pistils within the same floral envelope; bisexual. This is the rule rather than the exception among plants.

Hermas, one of the so-called apostolic fathers, generally supposed to be the person mentioned by that name in Rom. xvi: 14, though others maintain that he lived much later.

Hermes (called by the Romans Mercurius, and identified with their own god of that name), the son of Zeus and Maia, the daughter of Atlas. According to the legend Arcadia was his birthplace. The ancients represent Hermes as the herald and messenger of the gods. He conducts the souls of the departed to the lower world, whence he is called Psychopompos, and is therefore the herald of Pluto and the executor of his commands. His magic wand had the power to close the eyes of mortals, to cause dreams, and wake the slumbering. The qualities requisite for a herald he possessed in the highest perfection and bestowed them on others — grace, dignity, and insinuating manners.

Hermes Trismegistus, a supposed Egyptian priest and philosopher, the friend and counselor of Osiris, and the first lawgiver and founder of religious ceremonies in Egypt. He taught the Egyptians to cultivate the olive and measure land and the science of hieroglyphics.

Hermesianism, the method of religious inquiry taught by Georg Hermes. Hermes combined with Roman Catholicism a strong tendency toward philosophy. He was of opinion that reason must first be exercised in establishing a Divine revelation and the claims of the Church of Rome infallibly to interpret its teaching. Georg Hermes was born in Dreierwalde, Westphalia, Prussia, April 22, 1775, and died at Bonn, May 26, 1831. He was a distinguished theologian, and held for some time the chair of Catholic theology at Bonn.

Hermetic Sealing, the term used to denote a very old process in which a glass vessel, such as a tube or flask, has its neck so fused together that no part of the contained matter can escape, and nothing foreign can get in.

Hermit, a name given in the early ages, and still more in the later church, to a solitary ascetic, who, with a view to more complete freedom from the cares, temptations, and business of the world, took up his abode in a natural cavern or a rudely-formed hut in a desert, forest, mountain, or other solitary place.

Hermit Birds, the name given by Swainson to a genus having short wings and long broad tails. They often rise up perpendicularly in the air, make a swoop, and return to their former station. Habitat, Brazil.

Hermit Crab, called also the soldier crab. The name hermit crab is given because each individual of the family seeks out an abandoned univalve shell of suitable size, which may be at once a house and a fortification. Into the hollow spire of this he inserts his tail, guarding the aperture by means of his claws, and by means of which he draws his hermitage along.

Hermit Nation, The, Japan, in allusion to the exclusive policy of its people that for so many years closed it to the influences of Western civilization. Korea has also received the same title.

Hermon, Mount (now Jebel-es-Sheikh), the culminating point, 9,150 feet high, of the Anti-Libanus range.

Hermopolis, Magna, an ancient town of Egypt, on the Nile, on the border of the Thebaid, and near the frontier line of Upper and Middle Egypt. It had a celebrated temple sacred to Thoth, the ibis-headed god of letters, of which the portico alone is all that now remains. The modern name of Hermopolis is Ashmun or Eshmoon.

Hernandia, a genus of large East Indian trees. They have alternate entire leaves and flowers arranged in axillary or terminal spikes or corymbs.

Herndon, William Henry, an American lawyer; born in Greensburg, Ky., Dec. 28, 1818. In 1843 he formed a law partnership with Abraham Lincoln, which continued formally till the latter's death. He wrote the well-known "Life of Abraham Lincoln" (1889). He died near Springfield, Ill., March 18, 1891.

Herne the Hunter, a figure in popular tradition, long supposed to range at midnight around an ancient oak in Windsor Forest, England. He is referred to in Shakespeare's "Merry Wives of Windsor," and Herne's Oak continued to be an object of interest till it was blown down Aug. 31, 1863.

Hernia, the protrusion of some portion of the intestinal canal, or, in a more general sense, of any organ or part of an organ, from its natural place. The term is commonly applied to rupture at or near the abdomen.

Hero, a priestess of Aphrodite, who loved and was beloved by a beautiful youth named Leander, whose home was at Abydos, on the opposite shore of the Hellespont. Hero's position as a priestess, and the will of her parents, were obstacles to their union, but Leander every night swam across the Hellespont to visit his beloved, directing his course by a lamp that burned on the top of a tower on the seashore. But one tempestuous night the light was extinguished, and Leander was drowned. Hero, when she saw his dead body washed ashore at daybreak, threw herself down from the tower into the sea and perished.

Hero of Alexandria, a great mathematician and natural philosopher; a pupil of Ctesibius; flourished about 100 or 150 B. C. Among his works which have come down to us the most notable is on pneumatics.

Herod, called The Great, from his power and talents, King of the Jews; was a native of Ascalon, in Judea, where he was born 71, or according to others, about 61 B. C.; was the second son of Antipater the Idumean, who, being made procurator of Judea by Julius Cæsar, appointed him to the government of Galilee. He at first embraced the party of Brutus and Cassius, but after their death reconciled himself to Antony, by whose interest he was first named Tetrarch, and afterward King of Judea. After the battle of Actium he so successfully paid his court to the victor that Augustus confirmed him in his kingdom; and on all occasions his abilities as a politician and commander were conspicuous; but his passions were fierce and ungovernable. Though married to the celebrated Mariamne, a princess of the Asmonean family, her brother Aristobulus and grandfather Hyrcanus fell victims to his jealousy of the ancient pretensions of their race. His very love of Mariamne herself, mingled as it was with the most fearful jealousy, terminated in her execution; and his repentance and keen remorse at her death only exasperated him to further outrages against her surviving relations, her mother, Alexandra, and many more falling victims to his savage cruelty. His own sons by Mariamne, Alexander and Aristobulus, whose indignation at the treatment of their mother seems to have led them into some intrigues against his authority, were also sacrificed in his anger; and their deaths crowned the domestic barbarity of Herod. He rebuilt the temple at Jerusalem with great magnificence, and erected a stately theater and amphitheater in that city, in which he celebrated games in honor of Augustus, to the great displeasure of the more zealous of the Jews. He also rebuilt Samaria, which he called Sebaste, and adorned it with very sumptuous edifices. He likewise for his security constructed many strong fortresses throughout Judea, the principal of which he termed Cæsarea, after the emperor. On his palace near the temple of Jerusalem he lavished the most costly materials, and his residence of Herodium, at some distance from the capital, by the beauty of its situation drew around it the population of a great city. The birth of Jesus Christ is said to have taken place in the last year of the reign of Herod, viz., 4 B. C., the true year of Christ's birth being four years earlier than that adopted as the Christian era. This year was also signalized by the massacre of the children of Bethlehem. Herod was the first who shook the foundation of the Jewish government, by dissolving the national council, and appointing the high priests, and removing them at pleasure, without regard to the laws of succession. His policy, ability, and influence with Augustus, however, gave a great temporary splendor to the Jewish nation.

Herod Agrippa I., son of Aristobulus by Berenice, daughter of Herod the Great. From his attachment to Caligula he was imprisoned by Tiberius, but on the accession of Caligula (A. D. 37) he received the government of part of Palestine, and latterly all the dominions of Herod the Great. To please the Jews, with whom his rule was very popular, he caused St. James to be put to death, and imprisoned St. Peter. He died in the circumstances related in Acts xii., in A. D. 44.

Herod Agrippa II., a Jewish prince; son of Herod Agrippa I.; born about A. D. 27. On his father's death, he being too young to govern, Judea was reduced to a Roman province. He subsequently received the kingdom of Chalcis, and obtained the superintendency of the temple at Jerusalem, where, with his sister, Berenice, he heard the defense of Paul before Festus. Being driven from Jerusalem by the revolt of the Jews he joined Cestius, and later on Vespasian, and during the siege of Jerusalem was very serviceable to Titus. After its reduction (A. D. 70) he and Berenice returned to Rome. He is supposed to have died there, A. D. 94.

Herod Antipas, son of Herod the Great by his fifth wife, Cleopatra, was appointed Tetrarch of Galilee on his death (4 B. C.). This was the Herod who put to death St. John the Baptist, in compliment to his wife Herodias in revenge for his reproaches of their incestuous union. Having visited Rome he was accused of having been concerned in the conspiracy of Sejanus, and was stripped of his dominion, and sent (A. D. 39) with his wife into exile at Lugdunum (Lyons), or, as some say, to Spain, where he died.

Herodian, a Greek historian who held several public offices at Rome, and lived till some time after the year A. D. 238. His history is written in Greek, and comprises the period from the death of Marcus Aurelius to the year above mentioned. It is in eight books, without chronological data, but written in a pure and dignified style, in a spirit of independence and impartiality.

Herodians, a short-lived party, who, for some reason or other, rallied round Herod the Tetrarch. As Herod had too little force of character to inspire enthusiasm, it was evidently his position which gained him followers. Now that Judea had a Roman governor, Herod of Galilee was the leading representative of Jewish nationality menaced by Rome. Similarly, the Pharisees were the defenders of the national faith against the influx of classic paganism. These united to entangle and destroy Jesus.

Herodias, a granddaughter of Herod the Great and Mariamne, daughter of Aristobulus and sister of Herod Agrippa I. She was first married to her uncle Herod Philip, but afterward abandoned him and connected herself with his brother Herod Antipas. It was by her artifice that Herod was persuaded to cause to be put to death John the Baptist, who had boldly denunciated the incestuous connection which subsisted between her and Herod.

Herodotus, the oldest Greek historian whose works have come down to us; born in Halicarnassus, Caria, in the fourth year of the 73d Olympiad, 484 B. C. Many authors, such as Hellanicus of Lesbos, Charon of Lampsacus, and Dionysius of Miletus, had even in some measure anticipated Herodotus in the subject of his work; but the works of those logographers as they are termed, were rather collections of tales more or less fabulous, narratives of travels, etc., than histories in the true sense of the word.

Egypt, so celebrated for the wisdom of its institutions, seems to have been one of the most constant subjects of his attention. This country had long been rendered inaccessible to the rest of the world by the jealousy of its rulers and the prejudices of its inhabitants against foreigners. But a short time before Herodotus commenced his travels it had been opened to the Greeks; and though it was then almost entirely unknown, and every part of it has since been examined by crowds of travelers and described in almost every language, yet no author, ancient or modern, has given a more accurate and instructive account of it than Herodotus. He did not content himself with a knowledge of places; he investigated likewise the productions of the soil, the manners, customs, and religion of the people, the history of the last princes who reigned before the conquest of the country by the Persians, and many interesting particulars concerning the conquest itself. The second book of his history, which is devoted to the description of Egypt, is still our richest store of information concerning its ancient history and geography. From Egypt he proceeded to Libya, concerning which he collected a mass of information equally new to his contemporaries and valuable to us.

He asserts himself that he resided some time in Tyre. He visited the coasts of Palestine, and thence continued his route to Babylon, then opulent and flourishing. His visit to Assyria has been doubted; but if we consider the different passages of his description of Babylon we must be convinced that none but an eyewitness could have given so exact an account of that great city and of the manners of the inhabitants. Having arrived in Scythia, then little known to the Greeks, he penetrated into its immense wilds by the routes which had recently been opened by the Grecian colonies on the Euxine, and thence passing through the Getæ into Thrace and Macedonia, he reached Greece by the way of Epirus. Herodotus expected to find at home that honor which was due his labors, and leisure to arrange the information which he had collected. But Lygdamis, who had usurped the supreme authority in Halicarnassus and put to death the noblest citizens, among others Panyasis, forced him to seek an asylum in the island of Samos.

Having formed a conspiracy with several exiles who entertained similar sentiments with himself, he returned to Halicarnassus and drove out the usurper, but without much advantage to his country. The nobles who had acted with him immediately formed an aristocracy more oppressive to Halicarnassus than the arbitrary government of the banished tyrant. Herodotus became odious to the people, who regarded him as the author of their aggravated sufferings, and to the nobles, whose proceedings he opposed, so that bidding an eternal farewell to his unhappy country, he withdrew to the recently founded colony of Thurii, in Italy, where he spent the remainder of his life. Here, at an advanced age, we are told by Pliny he wrote his immortal work.

Heron, the common name of birds of the genus Ardea. The herons are very numerous, and almost universally spread over the globe. They are distinguished by having a long bill cleft beneath the eyes, a compressed body long slender legs naked above the tarsal joint, three toes in front, the two outer united by a membrane, and by moderate wings. The tail is short rounded, and composed of 10 or 12 feathers. The common heron is about three feet in length from the point of the bill to the end of the tail, builds its nest in high trees, many being sometimes on one tree. Its food consists of fish, frogs, mollusks, mice moles, and similar small animals. It has an insatiable voracity, and digests its food with great rapidity. It haunts fresh water streams, marshes ponds, and lakes, as also the sea-shore It was formerly in high esteem for the table, and, being remarkable for its directly ascending flight, was the special quarry pursued in falconry by the larger hawks. The great heron is an inhabitant of America, and is called also great blue heron; the great white heron or egret belongs to Europe; and the green heron, the flesh of which is much esteemed, is a native of North America.

HERON.

Herpetology, that branch of natural history which treats of reptiles.

Herrick, Mrs. Christine (Terhune), an American writer on domestic economy; born in Newark, N. J., in 1859. Her home is in New York.

Herrick, Robert, an American poet; born in Cambridge, Mass., in 1868; was graduated at Harvard in 1890; and in 1895 became Assistant Professor of Rhetoric at the University of Chicago.

Herrick, Mrs. Sophie McIlvaine (Bledsoe), an American editor and microscopist, daughter of Albert T. Bledsoe; born in Gambier, O., March 26, 1837. She became editor of the "Southern Review" in 1877, and afterward joined the editorial staff of "Scribner's Monthly."

Herrig, Hans, a German poet, dramatist, and editor; born in Brunswick, Dec. 10, 1845. He abandoned law for literature and journalism, joining the staff of the "Deutsches Tageblatt" when it started. His plays were numerous and successful. His greatest success was with the "church play" arranged and written for the Luther Jubilee of 1883, and widely performed. He died in Weimar, May 4, 1892.

Herring. There are many species of the genus, known under the name of herring; but the Clupea harengus is that which frequents the coasts of the United States in such numbers, and which furnishes so important an article of food to so many inhabitants. Herrings are found in the Atlantic from rather high Northern latitudes. They are met with in vast shoals on the coast of the United States, as low as the Carolinas. In Chesapeake bay they often cover the shore in such quantities as to become a nuisance. We find them also in the seas adjoining Kamchatka; and probably they reach Japan. Herrings feed much on minute crustaceans, and sometimes on their own fry. They are full of roe in the end of June, and continue in perfection till the beginning of winter. It is in summer that the great majority seem to spawn, but in certain localities numbers of them spawn in winter. How prolific they are may be guessed from the fact that 70,000 eggs have been counted in one female. The young herrings approach the shores in summer, and may then be from half an inch to two inches long. At a larger size they are eaten as whitebait. The invention of pickling or salting herrings is ascribed to the Dutch in the 14th century.

Herron, George Davis, an American lecturer and author; born in Montezuma, Ind., Jan. 21, 1862; was educated at Ripon College, Wis., and in Europe; pastor of Congregational Churches in Lake City, Minn., and Burlington, Ia., Professor of Applied Christianity in Iowa College, 1893–1900; leader of "The Social Crusade," a religious and socialist movement. The subject of his lectures was the relation of Christianity to existing social conditions.

Herschel, Caroline Lucretia, an English astronomer; sister of Sir William; born in Hanover, March 16, 1750. She devoted special energy to the discovery of comets, and was so successful as to be entitled to claim the priority of discovery of at least five. On her brother's death in 1822 she returned to her native country, where she died Jan. 9, 1848.

Herschel, John, an English physicist; youngest son of Sir John F. W. Herschel; born in Cape of Good Hope, Oct. 29, 1837. He was among the earliest to view colored flames through the prism and thus to lay foundation of our present vastly extended knowledge of the sun's constitution.

Herschel, Sir John Frederick William, an English physicist; only son of Sir William; born near Windsor March 7, 1792. He limited his first exertions to a reëxamination of the nebulæ and clusters of stars discovered by his father. In this labor he associated himself with Sir James South, and in 1824 they reported the position and apparent distances of 380 double and triple stars, obtained by more than 10,000 measurements. This memoir attracted the notice of the French Academy, and they voted it their astronomical prize; and two years later the gold medal of the Royal Society was awarded to each of the young astronomers. The results of the reëxamination were given in 1833 to the Royal Society in the form of a catalogue of stars in order of their right ascension. The catalogue contained observations on 525 nebulæ and clusters of stars not noticed by his father, and on a great number of double stars, between 3,000 and 4,000 in all. In 1831 he was created a knight of the royal Hanoverian Order.

By a computation, based on the star gauges in both hemispheres relative to the Milky Way, Sir John found that the stars visible in a reflecting telescope of 18 inches aperture amounted to 5,331,572; and, more than this, the number really visible in the telescope was vastly greater, for in some parts of the Milky Way the stars were found to be so crowded in space as to defy all attempts to count them. He died at his country residence in Kent on May 11, 1871, and was buried in Westminster Abbey.

Herschel, Sir William, an astronomer, son of a musician of Hanover; was born there on Nov. 15, 1738. He went to England in 1757. Late in 1779 he began a regular survey of the heavens, star by star, with a 7-foot reflector, and after 18 months' labor discovered, March 13, 1781, a new primary planet, named by him the Georgium Sidus, but now known as Uranus.

At Slough, near Windsor, he commenced the erection of a telescope of the enormous dimensions of 40 feet, and completed it in 1787. Its diameter was 4½ feet, and it weighed 2,118 pounds. In 1783 he had discovered a volcanic mountain in the moon, and from further observations made with his large instrument in 1787 two others were distinguished. He discovered, as he believed, that the Georgium Sidus was surrounded with six satellites; but there are still doubts about their number. He also discovered two of the Satellites of Saturn, and the fact that his system of rings revolved, and he measured his rotation and that of Venus, announced to the world that there were binary stars in the heavens, etc. He continued his astronomical observations till within a few years of his death, which took place in Slough on Aug. 25, 1822.

Herschell, Lord Farrer, the first baron of that name; born in London, England, Nov. 2, 1837. He was a privy councilor; a Knight of the Grand Cross of the Bath; doctor of civil law; doctor of laws; chancellor of London University; and was appointed British member of the Venezuela and British Guiana boundary arbitration tribunal in 1897. He was appointed one of the high joint commissioners from Great Britain, on the Anglo-American Commission, designed to settle existing differences between the United States and Canada, of which he became president. During the sitting of the commission in Washington, D. C., in February, 1899, he had a severe fall, from the effects of which he died in that city, March 1.

Hertha, the goddess of Earth, worshiped by the ancient Germans. According to Tacitus, she was adored chiefly among the Suevi, her sanctuary being in a grove on an island in the sea. Sometimes she issues from her island, takes her seat in her chariot drawn by cows, and goes out through the world, with the effect of making peace everywhere prevail. In astronomy, an asteroid, the 135th found. It was discovered by Peters, Feb. 18, 1874.

Herculi, a Teutonic tribe, from the coast of the Baltic, which descended the Danube to the Black Sea, sailed through the Hellespont in 262, with other Gothic tribes, and assailed the cities of Greece, burning, among others, the famous temple of the goddess Diana at Ephesus. They were met near Athens by Dexippus, who routed them in 267. They again wandered N., invaded Italy, and overthrew the W. empire in 476. The Longobardi almost destroyed them in 512, and their name is mentioned for the last time in history at the defeat and death of Teias by Narses, in 553.

Herwarth von Bittenfeld, Karl Eberhard, a Prussian general; born in 1796. He gained his first laurels in the war of liberation, especially in the battle of Leipsic. In 1864, raised to the rank of general, he acquired great fame through his daring capture of the isle of Alsen. In 1870, on the outbreak of the Franco-German war, he was made governor of the Rhine provinces, in 1871 a general field-marshal. He died in Bonn, Sept. 2, 1884.

Heshbon, a celebrated city of the Amorites, 20 miles E. of the mouth of the Jordan (Josh. iii: 10; xiii: 17). Its ruins are now called Hesban, and cover the sides of a hill 7 miles N. of Medeba.

Hesiod, one of the earliest Greek poets; born in Ascra, Bœotia, and usually supposed to have lived in the 8th century B. C. His "Theogony," being an attempt to present a systematic view of the origin and powers of the gods, and of the order of nature, is of great importance for the history of the religion of the Greeks.

Hesperides, in Greek mythology, the name of the famous sisters, who, assisted by the dragon Ladon, guarded the golden apples which Hera had received, on her marriage with Zeus, from Ge. Their genealogy, as well as their number are variously given by mythologists. They were, however, commonly set down at four, whose names were Ægle, Erythia, Hestia, and Arethusa. The locality of the gardens was also a matter of controversy, the two favorite opinions placing them W. of Mount Atlas, and N. of the Caucasus. With the assistance of Atlas the apples were stolen by Hercules, who killed the dragon.

Hesperornis, a remarkable extinct form of bird, the remains of which have been met with in the American cretaceous deposits. As described by Professor Marsh, it possessed small pointed reptilian teeth, which were implanted in a deep continuous groove, somewhat like those of the ichthyosaurus. Its brain was small and more reptilian in type than that of any adult bird as yet examined. It appears to have been a large diving bird, measuring over five feet from the point of the bill to the end of the toes. Its wings were rudimentary, its legs powerful, and its feet well adapted for rapid progression in water. The tail was broad, could move up and down, and was probably used as a rudder or swimming paddle. The long slender jaws were united in front only by cartilage, as in serpents, and had on each side a joint which admitted of some motion, so that the power of swallowing was doubtless equal to almost any emergency.

Hesperus, the Greek name for Venus as the evening star. Hence the Alexandrian grammarians called Italy, and sometimes all Western Europe, Hesperia "The Western land."

Hess, Heinrich von, a German painter; born in Dusseldorf in 1798. He was of a family illustrious in art, and his works form one of the principal attractions of Munich. He obtained great reputation as a portrait-painter. He died in Munich, in 1863.

Hesse, or **Hessen,** anciently a territory of Germany, mainly between the Neckar, Rhine, Main, Lahn, and Fulda rivers. After various fortunes it was ruled by the landgrave Philip I., who succeeded in 1509, and at his death in 1567 divided his dominions among his four sons. The death of two of these, however, reunited the territories in part, so that there remained only the two main divisions of Hesse-Cassel and Hesse-Darmstadt, the latter now known simply as Hesse.

Hesse, or **Hessen, Grand Duchy of,** formerly known as Hessen-Darmstadt, an independent state of South Germany, consisting of sundry distinct portions; area, 2,966 square miles; pop. 1,119,893. Of the two main portions, one (forming the provinces of Rheinhessen on the left, and Starkenburg on the right bank of the Rhine) lies immediately to the N. of Baden, the other, Oberhessen (Upper Hesse), is entirely enclosed by the Prussian province of Hessen-Nassau. Principal towns, Darmstadt, the capital; Mainz, Giessen, Bingen, and Worms.

Hessian Fly, a fly the larva of which is very destructive to wheat, barley, and rye crops (it does not attack oats). It is so named from the belief that it was brought over to America by the Hessian mercenaries during the Revolutionary War. The female fly is about ⅛ inch in length, with a wing expanse of about ¼ inch. Its body is brown, with the upper parts, the thorax, and the head of a darker shade, approaching to black. The wings are of a dusky gray, and are surrounded with fringes. The male is somewhat smaller than the female and has longer antennæ. The female flies usually lay their eggs on the young plants twice in the year, in May and September, out of which eggs the maggots hatch in from 4 to 14 days. These work themselves in between the leaf-sheath and the stem, and fix themselves near the lowest joints, often near the root, and suck the juices of the stem, so that the ear falls down at a sharp angle. These maggots turn to pupæ, from which the flies develop in about 10 days. It has long been a pest in the United States and Germany.

Hessians, the inhabitants of Hesse, in Germany. This term was applied to the 20,000 German troops hired by England from the Duke of Brunswick, the landgrave of Hesse-Cassel, and other petty German princes at the beginning of the American Revolution.

Hetæria, The, a secret society established among modern Greeks, and pledged by a most solemn oath to free the race from Turkish rule. Nearly every Greek who is able to accumulate $100 (the amount of the initiation fee) in a lifetime has been induced to join this society. It had its origin among the Greek refugees in Russia about a century ago.

Hetman, or **Ataman,** the title of the head (general) of the Cossacks. This dignity was abolished among the Cossacks of the Ukraine by Catharine the Great, and though the Cossacks of the Don still retain their hetman, the former freedom of election is gone, and the title of chief hetman is now held by the Russian heir-apparent to the crown.

Hettner, Hermann Theodor, a German historian; born in Leisersdorf, March 12, 1821. His masterpiece, published in 1856, "History of Eighteenth Century Literature," gave him high rank as a philosophical historian. Died in Dresden, May 29, 1882.

Heuglin, Theodor, Baron von, a German traveler; born in Hirschlanden, Germany, March 20, 1824. He became first known by his travels in the region of the White Nile and Abyssinia (1854). In 1870-1871 he made a journey to the region of Spitzbergen and Nova Zembla, and in 1875 a last journey to the shores of the Red Sea. He published several volumes of African travel and natural history. He died in Stuttgart, Nov. 5, 1876.

Hewit, Nathaniel Augustus, an American Roman Catholic priest and religious writer; born in Fairfield, Conn., in 1820. He had a varied experience, at first as law student, then in turn as Congregational minister, Protestant Episcopal deacon, and Roman Catholic priest; joining under the religious name of "Augustine Francis," the Paulist order founded by Father Hecker, and becoming professor and superior in the Paulist Seminary, New York. He died in New York city, July 3, 1897.

Hewitt, Abram Stevens, born in Haverstraw, N. Y., July 31, 1822. He was graduated at Columbia College; was commissioner to the French Exposition of 1867; member of Congress 1875-1879, and 1881-1886; mayor of New York 1887-1888; secretary of the Cooper Union for the Advancement of Science and Art, New York. He was son-in-law of Peter Cooper, and was a high authority on all questions relating to iron. He had also original views, frankly avowed and ably maintained, on the great political and economic issues of the age. He died in 1903.

Hewitt, John Hill, an American ballad and miscellaneous writer; born in New York city, July 11, 1801. His best-known work is the ballad "The Minstrel's Return from the War." He died in Baltimore, Md., Oct. 7, 1870.

Hexameter, the heroic verse of the Greeks and Romans. As its name implies, it consists of six feet, properly dactyls, the last of which is shortened by one syllable, and so becomes a trochee, or, as the final syllable is long by position, a spondee.

Heydeck, Karl Wilhelm von, (sometimes called Heidegger), a Bavarian landscape painter; born in Saaralben, Lorraine, in 1788. He entered the military academy at Munich in 1801, and rose to the rank of lieutenant-general. He served as a volunteer in the Peninsular campaign, and took an active part in the Greek war of independence. His pictures are numerous, the more important being preserved at Berlin and Munich. He died in Munich, in 1861.

Heyden, Friedrich August von, a German poet; born in Nerfken, East Prussia, Sept. 3, 1789. He gave up law and entered the army. Of distinguished family, he was employed in official posts at court in 1843, but fell into disfavor through reluctance to act as a literary censor. His verse is graceful and pleasing. He died in Breslau, Nov. 5, 1851.

Heyse, Paul, a German poet and novelist; born in Berlin, where his father was extraordinary Professor of Philology, March 15, 1830. In 1852 he traveled in Switzerland and Italy, and two years later settled in Munich on the invitation of King Maximilian II. of Bavaria, who granted him a pension. He lived mainly in Munich afterward, devoted almost exclusively to literature. Heyse's genius has found its most perfect expression in his numerous tales or novelettes ("Novellen"), and in this department of literature he holds almost a unique place among German writers. His work throughout shows a rich imagination and great fertility in invention.

Heywood, Thomas, an English dramatist; born in Lincolnshire, England. He lived in the reigns of Elizabeth, James I., and Charles I., and was educated at Cambridge. He composed wholly or in part 220 different plays. Of these only about 24 remain. He died about 1650.

Hezekiah (Hizkiyah, generally Hizkiyahu, strength of Jehovah), the 12th, and one of the best of the Kings of Judah. He succeeded Ahaz about 726 B. C., when he was 25 years of age, and died about 698 B. C. He had no sooner mounted the throne than he initiated a system of reform, on the injunctions of Isaiah, and broke up the idolatrous customs into which the people had fallen during the life of his father. With patriotic zeal he assumed the aggressive against the Philistines, and not only rewon the cities lost by his father, but dispossessed them of most of their own.

At this time the King of Judah had a dangerous illness, which threatened serious complications, and the kingdom was in a difficult crisis, for the king had no heir, Manasseh not being born till long afterward. To the king's anguish and prayer Isaiah was ordered to administer comfort and the promise of a fresh lease of life. Among the ambassadors who came with letters and gifts to congratulate him on his recovery was the viceroy of Babylon, to whom he unfortunately, though from perfectly justifiable motives, displayed the royal treasures. For this he received a terrible rebuke, and he was told by Isaiah that from Babylon would come the ruin and captivity of Judah.

Sennacherib besieged Jerusalem with mounds, and Hezekiah, to rid the country of its enemies, promised 800 talents of silver and 30 of gold. On this Sennacherib marched into Egypt, but his expedition proving futile he made a second invasion of Judah and attacked the stronghold of Lachish. From Lachish he sent an army against Jerusalem and the ministers of Hezekiah were filled with anguish and dismay. The piety of the king was of more avail than arms, and the result of prayer was a prophecy of immediate deliverance. "That night the angel of the Lord went out and smote in the camp of the Assyrians 185,000 men." Among the many conjectures as to the agent of this destruction, the most probable is that it was the pestilence. Hezekiah did not long survive this deliverance, and after a reign of nearly 29 years he died at the age of 54, and was buried with much pomp amid universal mourning. He was one of the best Kings of Judah. Among the many highly useful works executed by him, the aqueducts of Jerusalem take a foremost place. During his reign was the golden age of prophetic poetry, for in addition to Isaiah there flourished then Nahum and Micah.

Hiawatha, an Indian legendary hero and peacemaker, known by this name among the Iroquois and by other titles among the other tribes of North America. He is mentioned in various works on the aborigines, and in 1855 was immortalized in the beautiful poem, "Hiawatha," by Longfellow. In this he is made to appear as an Ojibway chief.

Hibernation, in zoölogy, that peculiar condition of sleep in which certain animals, chiefly cheiroptera and rodentia, pass the winter season. The bats, the hedgehog and the dormouse are the most striking examples of this phenomenon.

Hibernators, when they retire for the winter, are unusually fat; when they emerge from their hibernaculum they are unwontedly lean. They all try to keep warm, the heat of their body being nearly that of their hibernaculum. Yet if exposed to greater cold they revive, and, if the temperature is still further lowered, like other animals they freeze to death. During dormancy the animal functions are all but suspended. Respiration and circulation are reduced to a minimum. All reptiles and batrachia become torpid during cold weather, snakes passing the winter in tangled knots as if for warmth; if the viper is aroused at this season its venom is said to be inert. Alligators creep into holes in the riverbanks, and frogs lie dormant in the mud at the bottom of ponds. Many fishes (carp, roach, chub, minnows, eels, etc.), also retire into some deep recess, or into the mud, though their condition at this period is not that of the true hibernators. Their vitality only is lowered. The torpidity of insects in the pupa and other stages is well known. Individuals belonging to the Vanessa group of butterflies which hibernate in the imago stage occasionally emerge during mild winter days. But hive-bees do not hibernate, food being necessary for their subsistence during the flowerless season.

Hibernia, the ancient name of Ireland, applied to it first by Julius Cæsar.

Hiccough, or **Hiccup,** a series of sudden, rapid, and brief inspirations, followed by expiration accompanied by noise. It is generally caused by irritation of the stomach, but is produced chiefly by the respiratory muscles. In children it sometimes follows a violent fit of crying or sobbing. It also accompanies certain fevers. There is an hysteric hiccough and a hiccough of death.

Hichens, Robert Smythe, an English journalist and novelist; born in Speldhurst, Kent, England, Nov. 14, 1864. In 1893 he visited Egypt for his health, and while there conceived the idea which materialized in the "Imaginative Man" (1895). "The Green Carnation" (1894), however, epigrammatic and keenly satirical in tone, first brought him into public notice, and was followed by other works of fiction.

Hickory, in botany and commerce, the several species of timber trees. One is the shell-bark, scaly-bark, or shag-bark hickory, from the tendency of the bark to peel off in long, loose strips. Its wood is noted for its elasticity and toughness. It is a large tree, sometimes 80 or 90 feet high, by 2 feet in diameter, growing in this country from South Carolina to New Hampshire. The nuts, which are whitish, are sub-globular, pointed at each end. Other species of the genus are the mocker-nut, white-heart, or common hickory, the wood of which is excellent for mechanical purposes, or for burning, the bitter-nut or swamp hickory, the pig-nut hickory, or hog-nut or broom hickory, the nutmeg hickory, etc.

Hicks, Elias, an American clergyman; born in Hempstead, N. Y., March 19, 1748; began his ministry among the Quakers in 1775 and devoted himself untiringly to his work for over 50 years without any compensation. He was an active abolitionist and in company with others was instrumental in inducing the State of New York to pass an act which, on July 4, 1827, liberated all slaves within its borders. His doctrinal views, which were not acceptable to many Quakers, led to a disruption of the society, and a body adhering to his teachings was organized under the name of "Hicksites." Died in Jericho, N. Y., Feb. 27, 1830.

Hidalgo, a Spanish nobleman of the lower class. There were hidalgos de naturaleza, of noble birth, and hidalgos de privilegio, i. e., those on whom the king had conferred nobility, and those who purchased nobility. The title is now obsolete.

Hides, the skins of animals, either raw or dressed; but the name is more commonly given to the undressed skins of the larger domestic animals, as oxen, horses, etc., the smaller being called skins. The hide trade is now an important one.

Hierarchy, sacred government, sometimes used to denote the internal government of a Church, sometimes the dominion of the Church over the State. In the former sense hierarchy arose with the establishment of the Christian Church as an independent society. Though elders, called presbyters, stood at the head of the earliest congregations of Christians, their constitution was democratic, each of the members having a part in all the concerns of the association. The government of the congregations was gradually transferred into the hands of their officers, as was natural when the congregations had become societies of great extent. In the 2d century the bishops acquired a superiority over the presbyters, and became the supreme officers of the congregations, although the presbyters retained some share in the government. The bishops in the capitals of the provinces, who were called metropolitans, soon acquired a superiority over the provincial bishops and exercised a supervision over them. They were themselves subject to the bishops of the principal cities of the Roman empire, Constantinople, Antioch, Alexandria, and Jerusalem, who received the title of patriarchs; and thus a complete aristocratic constitution was formed, which continued in the Greek church, while, in the Latin, the aristocracy was transformed into a monarchy. The Roman bishop acquired the primacy over the others, and the opinion having become prevalent that the apostle Peter had founded the Roman Church and that its bishop was his successor, his authority constantly increased, and he gradually became a monarchical head of Western Christendom. This attribute of the papacy is no longer acknowledged even in countries most strongly Roman Catholic, and for many years past has not even been asserted by the popes, who have confined their claims to temporal power to the part of Italy formerly known as "States of the Church."

The term hierarchy is still in common use to denote the governing and ministering body in the Church according to its several gradations. Strictly it can be applied only to those churches which are ruled by bishops, such as the Roman Catholic Church and the Anglican Church, which also holds the theory of a hierarchical gradation of rank and authority. Both the Churches named comprise the three orders of bishops, priests, and deacons. Those Lutheran communities which still retain the title of bishops, concede so little of independent jurisdiction to the office, that the gradations in the ministry can scarcely be regarded as having a strict hierachical character.

Hierarchy is also used to denote a division of the angels, prevalent in the Middle Ages.

Hiero I., King of Syracuse in Sicily, brother and successor of Gelon. On his accession to the throne of Syracuse, Gelon conferred on Hiero the government of Gela, his native place, and on his death left him 478 B. C., a scepter which he had rendered legitimate by his virtues. Hiero's reign was marked by a peculiar splendor on account of his generous encouragement of learning. His court became the rendezvous of the most distinguished men of his time. According to Ælian and Pindar, few princes were to be compared with him. He was several times victor in the Grecian games. Pindar has celebrated his victories; several odes of this poet are filled with his praises. Hiero died in Catana, 467 B. C.

Hiero II., King of Syracuse; born about 307 B. C. He was a son of Hierocles, a noble Syracusan, who claimed a descent from the family of Gelon.

He was chosen by the soldiers as general in 275 B. C., and recognized as king about 270. In 264 he made an alliance with the Carthaginians against Rome, and thus began the first Punic war. Being defeated by the Romans he made peace by the payment of tribute, and was ever after a faithful and useful ally to them. His subjects enjoyed great prosperity during his reign. He died 215 B. C.

Hierocles. A persecutor of the Christians, who was president of Bithynia, and afterward governor of Alexandria, where he committed numberless cruelties. He wrote some books against the Christians, mentioned by Lactantius and Eusebius. The remains of his writings were published by Bishop Pearson in 1654, with a curious discourse on them. Lived in the 4th century.

Hieroglyphic, in ordinary language, written in characters difficult to decipher. Hieroglyphics or hieroglyphs are representations of animals, plants, and other more or less material bodies, sculptured on Egyptian temples, obelisks, sarcophagi, etc., and designed for ideographic or other writings. They are not confined to Egypt; they exist in the adjacent lands, and in Mexico.

Hieronymites or **Jeronymites,** hermits of St. Jerome (Hieronymus), an order of religious persons established in 1374, who wear a white habit with a black scapulary. They possessed the convent of St. Lawrence in the Escurial, and still have convents in Sicily, the West Indies, and South America.

Higginson, Mary Thacher, pseudonym Mrs. Potter, an American author and poet, wife of T. W. Higginson; born in Machias, Me., Nov. 26, 1844.

Higginson, Thomas Wentworth, an American author; born in Cambridge, Mass., Dec. 22, 1823; was graduated at Harvard College in 1841; served in the Civil War as captain in the 51st Massachusetts Volunteer Militia, colonel of the 1st South Carolina Union Volunteers, and colonel of the 33d United States Colored Infantry.

Highbinders, the name given by Americans to a secret organization known to exist among the Chinamen in North America. The Chinese call these societies by a name meaning "hatchet" societies, and the members "hatchet boys." The members seem in reality to be lawless spirits who have organized for mutual protection in crime, for police purposes, and for blackmail, especially the last. Murder they consider a legitimate means of intimidation or revenge, and the coolie whose death has been decreed by a highbinder society has never been known to escape the hatchet boy or boys appointed for his doom. The term "Chinese Freemasons," applied to these people, has no foundation whatever in fact. They have not the remotest connection with Freemasonry.

High Church, one of the three great parties in the English Church. They regard the Episcopal form of government as so essential to a true church that, as a rule, they do not feel free to recognize, as sister churches, those Christian denominations which are under other forms of government. During the 19th century Highchurchism developed first into Tractarianism and then into Ritualism. In the United States the term is applied to Episcopalians who favor forms of worship resembling the Roman Catholic.

High German, originally the Teutonic dialect spoken in the S. and elevated parts of Germany, as distinguished from Platt Deutsch or Low German, spoken in the N. and more lowland portions of Germany.

Highland Regiments, regiments in the British army originally raised in the Highlands of Scotland. Each regiment has its own distinctive tartan, some retain the kilt, others wear trousers. Several highland volunteer regiments are brigaded with this corps. The regiments are largely recruited in England and Ireland.

Highlands of Scotland, The, a somewhat vague and indefinite geographical division of Scotland, N. and W. of a line running N. E. from Dumbarton on the Clyde through the counties of Dumbarton, Stirling, Perth, Forfar, Kincardine; then N. W. through Aberdeen, Banff, Moray, and Nairn, to the shores of the Moray

Firth. The mountainous parts of Banff, Moray, Aberdeen, and Kincardine are also recognized as forming part of the Highlands; while Caithness (partly) and the Orkney and Shetland Isles are excluded, because their inhabitants are of Scandinavian origin. The whole of the district, which embraces the Celtic-speaking part of Scotland, is wild, rugged, and mountainous, with much grand and picturesque scenery. Forming, by their natural characteristics, a region distinct from the Lowlands of Scotland, the Highlands were long in a state of political semi-independence, and socially and otherwise the people have still certain characteristics peculiar to themselves. What especially separated this region from the rest of Scotland was not only the Celtic language and blood, but also the clan system and all connected with it.

Highness, a title of honor given to princes or other persons of rank, used with the possessive pronouns "his," "her," etc., and with the addition of "royal," "imperial," "serene," applied to the members of royal, imperial, and some German sovereign families.

High-pressure, operated by a large measure of force of some sort. A high-pressure alarm in a steam engine is an alarm intended to give notice of a dangerous head of steam, and to prevent an explosion of a steam generator.

High Priest, the chief priest in any faith, he who occupies the highest place in the hierarchy, as the Pontifex Maximus among the Romans. In Judaism, the divinely-appointed head of the Jewish hierarchy. The first to hold the office was Aaron. The office was to descend lineally in his family. The high priests were to be without blemish, were to avoid eating things which died of themselves, or marrying a widow or a divorced person. They were not to make mourning for private or domestic sorrows.

High Seas, the open sea or ocean. The claims of various nations to exclusive rights and superiority over extensive tracts of the ocean highway have been settled after much controversy by a general international law. The principle now accepted is that the jurisdiction of maritime states extends only for 3 miles, or within cannon range of their own coast; the remainder of the seas being high seas, accessible on equal terms to all nations. Inland seas and estuaries, of course, are excepted.

Hildreth, Charles Lotin, an American author; born in New York city, Aug. 28, 1856. He served on the staff of the New York "World" and later on "Belford's Magazine." He died in 1896.

Hildreth, Richard, an American historian; born in Deerfield, Mass., June 22, 1807. He first became known as a miscellaneous prose-writer and political journalist. The "History of the United States" is his greatest work, covering the period from the discovery of America to the end of President Monroe's first administration. He went to Italy in 1861 as United States consul, and died in Florence, July 11, 1865.

Hiles, Henry, an English organist, composer, and author; born in Shrewsbury, England, Dec. 31, 1826. He was the author of the standard theoretical works: "The Harmony of Sounds," and "The Grammar of Music."

Hill, Mrs. Agnes Leonard (Scanland), pseudonym Mollie Myrtle, an American novelist; born in Louisville, Ky., Jan. 20, 1842.

Hill, Ambrose Powell, an American military officer; born in Culpeper co., Va., Nov. 9, 1825; was graduated at the United States Military Academy in 1847; served in the Mexican War; resigned from the National army in March, 1861, and was made colonel of the 13th Virginia regiment; was promoted Major-General in May, 1862; greatly distinguished himself in numerous battles, in recognition of which he was promoted Lieutenant-General May 20, 1863, and placed in command of one of the three divisions into which the Confederate army was divided. He led his corps at Gettysburg and later at Bristow Station; and with Longstreet checked for a time the assault on the Weldon railroad in 1864. He was killed in front of Petersburg, Va., April 2, 1865.

Hill, Daniel Harvey, an American military officer; born in Hill's

Iron Works, York district, S. C., July 12, 1821; was graduated at the United States military academy in 1842; served in the Mexican War; became president of the North Carolina Military Institute in Charlotte in 1859; in the Civil War entered the Confederate army as colonel; rendered important service in September, 1862, and was promoted to Lieutenant-General in 1863; commanded a corps at the battle of Chickamauga; became president of the Arkansas Industrial University in 1877; died in Charlotte, N. C., Sept. 24, 1889.

Hill, David Bennett, an American lawyer and statesman; born in Havana, N. Y., Aug. 29, 1843. He studied law, and was admitted to practice in 1864; elected to the State Assembly in 1870–1871; in 1882 was chosen lieutenant-governor of his State, succeeding Mr. Cleveland as governor when the latter assumed the presidency. In 1885 he was renominated for the governorship by the Democracy and elected. In 1888 he was again nominated and reëlected. In 1891 he was chosen United States senator. He was a prominent candidate for the presidential nomination in the Democratic National Convention of 1892. He is still regarded as a great party leader, and is spoken of for the Presidential nomination in 1904.

Hill, David Jayne an American educator; born in Plainfield, N. J., June 10, 1850. He became president of Rochester University, N. Y., in 1888, and 1st Assistant United States Secretary of State, Oct. 25, 1898.

Hill, James J., a leading American railway official and financier; born near Guelph, Upper Canada, Sept. 16, 1838. In steamship and railway transportation business from youth up, and now president of the Great Northern system.

Hill, Robert Thomas, an American geologist; born in Nashville, Tenn., Aug. 11, 1858; was graduated at Cornell University in 1886, and immediately after leaving college entered the service of the United States Geological Survey. He was engaged in geological and geographical explorations in the Southern States and in Mexico; and made explorations and studied the problems of the geological history and origin of the land forms of Central America and the West Indies with Prof. Alexander Agassiz. He also was lecturer in the School of Economics of the University of Michigan; and was Professor of Geology in the University of Texas for two years. His most important work, published in 1898, was entitled "Cuba and Porto Rico, with Other Islands of the West Indies." In May, 1902, he was sent by the National Geographical Society at the head of the expedition to investigate the terrible volcanic eruption in Martinique.

Hill, Sir Rowland, the author of the penny-postage system; born in Kidderminster, England, Dec. 3, 1795. After agitating, for several years, his scheme regarding a reform of the old postal and franking systems, he, in 1842, succeeded in getting it carried into effect. He was also the originator of the money-order system, and of postoffice savings-banks. He died in Hampstead, near London, Aug. 27, 1879.

Hill, Theophilus Hunter, an American poet; born in Raleigh, N. C., Oct. 31, 1836. He was a lawyer in Raleigh, and State librarian, 1871–1872. He wrote "Hesper and Other Poems" (1861), distinguished as being the first book copyrighted by the Confederate government.

Hill, Thomas, an American clergyman and educator; born in New Brunswick, N. J., Jan. 7, 1818. He was president of Harvard College, 1862–1868. He died in Waltham, Mass., Nov. 2, 1891.

Hillard, George Stillman, an American lawyer; born in Machias, Me., Sept. 22, 1808. As a Massachusetts legislator he was commended by Daniel Webster, and he was conspicuous as an orator. He died in Boston, Mass., Jan. 21, 1879.

Hillel the Elder, surnamed Hassaken, a Jewish rabbi; born in Babylonia. He lived in the century preceding the Christian era. At the age of 40 he removed to Jerusalem, where he studied the law with such diligence as to become master of the chief school of that city. He formed a new digest of the traditionary law, from which the "Michna," or earliest part of the Talmud, is derived. He lived to the great age of 120 years.

Hillel the Younger, called Nasi, or prince of the captivity, presided over the Jewish Church in the 3d and 4th centuries, and distinguished himself by his great astronomical learning, reforming the Jewish calendar, regulating the period of the equinoxes, etc.

Hill Forts, the refuges and strongholds of the early inhabitants, existing in every country of Europe. Their range in time extends from the early prehistoric through the early historic periods of the racial areas in which they are found.

Hillhouse, James Abraham, an American poet; born in New Haven, Conn., Sept. 26, 1789. A merchant in New York, he retired from business in 1822. He died near New Haven, Jan. 4, 1841.

Hilliard, Henry Washington, an American lawyer, soldier and diplomat; born in Fayetteville, N. C., Aug. 4, 1808. He was graduated at South Carolina College in 1826, was admitted to the bar in 1829, and was a member of Congress from Alabama in 1845–1851. During the Civil War he was a Brigadier-General in the Confederate army. He was United States minister to Brazil in 1877–1881. He died in Atlanta, Ga., Dec. 17, 1892.

Hill of Tarik, the rock of Gibraltar, named after the Berber leader, Tarik, who conquered the fort in 711.

Hillsdale College, a coeducational institution in Hillsdale, Mich.; founded in 1855 under the auspices of the Free Baptist Church.

Hill Tribes, in ethnology, remnants of the early tribes found among the inhabitants of hills. The term hill tribes is now used chiefly of the Indian aborigines in the Himalayas, the Vindhya, the Western Ghauts, the Neilgherry Hills, etc.

Hilprecht, Herman Volrath, an American educator; born in Hohenerxleben, Germany, July 28, 1859; was graduated at the Ducal Gymnasium, Bernburg, Germany, in 1880; also studied at the University of Leipsic in 1880–1885; became Professor of Assyrian and Comparative Semitic Philology at the University of Pennsylvania in 1886. He is a leading authority in cuneiform palæography, having made extensive explorations in Asia Minor, Syria, and Babylonia, and is the author of many contributions to Babylonian and Oriental chronology, archæology, history, philology, and palæography.

Hilton Head, an island off the S. E. coast of Beaufort district, S. C.; at the mouth of Broad river. During the Civil War a strong fortification was erected here by the Confederates, called Fort Walker, armed with 20 guns, and garrisoned by a force of 620 men. This fort was attacked Nov. 5, 1861, by a Union fleet under Commodore Dupont, and captured, after a smart action, in which a Confederate flotilla, or "mosquito fleet," under Commodore Tatnall, took part. The National loss was reported at 8 killed and 23 wounded, that of the Confederates, 10 killed and 10 wounded.

Himalayas, The, or the **Himalaya Mountains,** an extensive mountain range of Asia, and the loftiest in the world, bounding Hindustan on the N. and separating it from the table-land of Tibet, which stands 10,000 feet above the sea. The direction of the range is S. E. from the Indus to the Gunduk, and thence E. to its termination. Its entire length is 1,900 miles; its average breadth is 90 miles, and the surface which it covers is estimated at 160,000 square miles. The average height of the Himalayas has been estimated at 15,700 feet. The principal peaks are: Mount Everest, 29,002 feet; Kunchinjinga, in Sikkim, 28,178 feet; W. peak of the same, 27,826 feet; Dhawalagiri, in Nepal, 26,862 feet; The passes over the main ridge amount to about 20, a few of which only are practicable for horses, sheep being principally used as beasts of burden over the steep acclivities. The limit of perpetual congelation in this chain is about 12,000 feet above sea-level. There are no direct traces of volcanoes so far discovered by explorers, but the numerous thermal springs, and many shocks of earthquake felt by travelers in many parts of the range, indicate it to be the focus of derangements of the earth's crust. The height at which plants and trees flourish on the Himalayas varies on the N. and S. slopes nearly proportionally to the difference in the altitude of the snow-line. On the S. slope grain cultivation is not attempted higher than 10,000 feet; the highest habitation is at 9,000 feet; pines show their best growth at an elevation of 10,300 feet. The rhododendron grows up to 12,000 feet, and birches are found as high as 13,000 feet, above the sea. On the N. side, villages are found as high as 13,000 feet, grain is cultivated at 13,500 feet, birch trees rise to 14,000 feet; and vegetation is met with at 17,500 feet. Wheat, barley, and other grains are found on these heights. Strawberries and currants thrive on the S. slope, at an altitude of 11,600 feet.

Himyarites, a race or group of races in Arabia, regarded as descendants of Himyar, one of the mythical ancestors of the Arabs. According to tradition they became the dominant race in Yemen about 3,000 years before Mohammed, and spread to the Euphrates on the one hand and Abyssinia on the other.

Hind, John Russell, an English astronomer; born in Nottingham, England, May 12, 1823. He calculated the orbits and declination of more than 70 planets and comets, noted a number of new movable stars, and between 1847 and 1854 discovered 10 minor planets. He died in Twickenham, England, Dec. 22, 1895.

Hindi, the language spoken in the valley of the Ganges and its tributaries, from the watershed of the Jumna as far down as Rajmahal. It is the legitimate heir of the Sanskrit, and fills that place in the modern Indian system which Sanskrit filled in the old.

Hinduism, the system of religious belief held by the ordinary Hindus, as distinguished from that of the Indian aborigines and the Musselman and Christian invaders. Hinduism is not a homogenous system of belief, but a conglomerate, in large measure derived from prior faiths.

Hindu Kush, or **Indian Caucasus,** a mountain system of Central Asia. It is generally considered as a continuation of the Himalayas, which it adjoins at the Indus, and then stretches W. till it unites with the Ghur Mountains in North Afghanistan. In many features the Hindu Kush resembles the Himalayas proper, though it is lower and destitute of forests.

Hindustan, the name commonly given to the whole Indian empire, but which properly applies only to the Punjab and the valley of the Ganges.

Hindustani, a native of Hindustan proper. The word is also applied to a language which apparently arose from the efforts made by the Hindus and their Mohammedan conquerors to understand each other. It approaches Hindi, but has a large admixture of both Persian and Arabic words foreign to India. Hindustani will carry one all over India, but is really the vernacular of the Mohammedans, only, and not of the Hindus properly so called. It is sometimes called Urdu or Oordoo. When people speak of the Indian language they mean Hindustani, but the designation is erroneous. There are at least 12 leading Indian languages.

Hinny, a hybrid, the produce of a stallion and a she-ass. It is smaller and inferior in strength to the mule produced by an ass and a mare.

Hinton, Richard Josiah, an American author; born in London, England, Nov. 25, 1830; settled in the United States in 1851; studied topographical engineering at the Columbia School of Mines; removed to Kansas in 1856 and became a supporter of the cause of John Brown; served in the National army in 1861-1865; and was the first white man appointed to raise and lead colored troops. After the war he became engaged in newspaper work, which he pursued in Washington, New York, and San Francisco. He died Dec. 20, 1901.

Hiogo, a seaport of Japan, opened to foreign trade in 1860. It is situated on the island of Hondo, on the Bay of Osaka, 40 miles S. W. of Kioto, with which it has railway communication. The trade with the interior is important, and the exports of tea, copper, fish, silk, etc., large. Pop. 215,780.

Hip Joint, one of the most important articulations in the body, and the most complete example of the ball-and-socket joint. The hip joint is made up of two bones — the acetabulum, or cup-like cavity in the os innominatum, or three bones forming one-half of the pelvis; and the head of the femur, or thigh-bone, the same provision being made here, by capsular, conical, transverse, and lateral ligaments, to secure the bone in its socket, and yet afford unlimited play to the limb; while, to guard it from blows and the force of accidents, the part is padded with a number of short, fleshy muscles, in addition to which a quantity of adipose tissue beneath the cuticle still further protects the part.

Hip Joint, Disease of the, a disease differing in many important points from other joint-diseases. Its connection with scrofula is more distinctly marked than that of most other joint diseases, and it almost always occurs before the age of puberty.

Hippias, tyrant of Athens. He was the son of Pisistratus, at whose death he assumed the government, in conjunction with his brother Hipparchus, on whose death he seized the reins of government, and revenged the death of his brother by putting to death all of whom he entertained the least suspicion. His tyranny at last became so obnoxious to the citizens that he was expelled from the city 510 B. C. He afterward induced Darius to apply to the Athenians in his favor; and their decisive refusal kindled the first war of the Persians against the European Greeks. According to some authorities the fate of Hippias was decided on the field of Marathon, where he fell on that memorable day, fighting against his countrymen, 490 B. C.

Hippocrates, the greatest physician of ancient times, usually designated the "Father of Medicine"; born in the Island of Cos, about 460 B. C. He was one of the family of the Asclepiades and the contemporary of Socrates and Plato; he began to be illustrious during the Peloponnesian war. He traveled extensively, and at length settled in Thessaly. Among his authentic writings are: "Prognosis," "Aphorisms," "On Epidemics," "On Diet in Acute Diseases," "On Air, Water, and Place," "On Wounds of the Head." He was distinguished for his remarkable skill in diagnosis, and his accurate and vivid description of morbid symptoms. He died in Larissa, Thessaly, about 377 B. C.

Hippocrene, a celebrated fountain on Mount Helicon in Bœotia, sacred to the Muses. It was fabled to have burst from the ground when struck by the feet of Pegasus, and to possess the power of poetic inspiration.

Hippodrome, the Greek name for the public place where the horse and chariot races were held. The name is sometimes applied to a modern circus.

Hippogriff, or **Hippogryph,** in Greek mythology, a fabulous animal, represented as a winged horse, with the head of dragon or griffin.

Hippophagy, a name given by the Greeks to a Scythian people, living N. E. of the Caspian Sea, and to a Sarmatian tribe N. of the Euxine, who were said to be eaters of horseflesh. In some parts of modern Europe horseflesh is a regular and wholesome article of diet. In France a society of hippophagists was formed under the auspices of Geoffroy St. Hilaire; in 1866 the sale of horseflesh in the Paris market as an article of food was officially recognized and regulated; and during the siege of Paris horseflesh was gladly eaten by all who could get it. Poultry are in some places fed on the flesh of old horses. Owing to the high price of beef, mutton and pork great efforts are being made in Germany to promote the use of horseflesh as food. In the United States it is used in certain kinds of sausages.

Hippopotamus. The hippopotamus is fully equal to the rhinoceros in size, and is not less formidable. In figure the hippopotamus more closely resembles an unwieldy ox than any other animal. A male hippopotamus has been known to be 17 feet in length, seven in height, and 15 in circumference. The head is very large, being 3½ feet in length; the mouth is amazingly wide, the ears small, pointed, and lined with fine short hairs; the eyes and nostrils are small; the lips very thick, broad, and beset with a few scattered tufts of short bristles; the body is thinly covered with very short whitish hair, more sparingly distributed on the under parts; the tail is short, slightly compressed, and almost bare; the legs are short and thick; the feet large, the toes four, each furnished with a hoof, and all resting on the ground; the skin is very thick and of a dusky color. The hippopotamus is confined to Africa, and abounds most in the lakes and rivers of Abyssinia and the equatorial regions; but the animal is also found in considerable numbers in the Gambia, Niger, etc.

The great strength of the hippopotamus would render it one of the most formidable of quadrupeds were its disposition ferocious; but it is comparatively mild and gentle, except under great provocation or when wounded. When excited, however, its fury is remarkable; it often destroys boats with its teeth, or upsets them by raising them on its back. There is no doubt that it can be tamed. Live specimens are to be seen in the Zoölogical Gardens, New York, and elsewhere, and even in traveling menageries. In manners the hippopotamus resembles somewhat the hog. His sleeping place is usually muddy islands overgrown with reeds; in these places also the female brings forth. She goes with young nearly eight months, and produces but one at a birth. She is often seen in the rivers with her calf on her back. The hippopotamus is mainly a nocturnal animal, especially in regions where it is hunted with vigor. While it is resting in inactivity various insect-eating birds wander about on its back hunting out the numerous parasites which infest it. These birds are also said to act as sentinels in giving it warning of approaching danger.

The Ligerian hippopotamus, found in Western Africa, is a much smaller and lighter animal, blackish above and whitish below. Its length is only about six feet. The remains of several extinct species have been discovered.

Hiproof, a roof, the ends of which slope so as to have the same inclination to the horizon as its other two sides, being thus of a triangular form.

Hiram, a King of Tyre, who sent to congratulate David on his accession to the throne, and aided him in building his palace (II Sam. v: 11; I Chr. xiv: 1). He was the father of Abibaal of secular history. Also a king of Tyre, a grandson of the former (II Chr. ii: 14), and like him a friend of David. He congratulated Solomon at the commencement of his reign, and furnished essential aid in building the Temple.

Hiram College, a coeducational institution in Hiram, O.; founded in 1850 under the auspices of the Christian Church. President Garfield was a student there.

Hirst, Henry Beck, an American poet; born in Philadelphia, Pa., Aug. 23, 1813; died in Philadelphia, March 30, 1874.

Hirth, Friedrich, an American educator; born in 1849; entered the Chinese customs service in 1870; was engaged in the statistical work relating to the commerce of China, in Shanghai in 1877–1888; in Hong-Kong in 1890–1895; and in Munich, Germany in 1897–1902, when he was called to the newly created Department of Chinese in Columbia University. In the summer of 1902 he was in St. Petersburg, cataloguing an enormous collection of Chinese manuscripts captured at Peking.

Histology, that branch of anatomy which examines and treats of the minute structure of the tissues of which living organisms are composed. It is divided into several sections. Human histology treats of the tissues of man; comparative histology treats of the tissues of the lower animals; and vegetable histology treats of the tissues of plants. By others histology is divided into three sections: general histology, which considers the tissues of which the human and animal body generally is composed; histology proper, in which the various tissues in their anatomical relations and composition are considered; and topographical histology, dealing with the more minute structure of the organs and systems of the body. Each of these subdivisions may be divided again into normal histology, which refers to the healthy tissues, and pathological histology, which investigates the changes they undergo in disease.

Hit (ancient Is), a town of Turkey in Asia, on the Euphrates, 85 miles W. N. W. of Bagdad. It has pits of bitumen, which have been worked from time immemorial, and naphtha springs.

Hitchcock, Charles Henry, an American geologist; son of Prof. Edward Hitchcock; born in Amherst, Mass., Aug. 23, 1836; was graduated at Amherst College; was assistant geologist of Vermont (1857–1861); State Geologist of Maine (1861–1862); and of New Hampshire (1868–1872); Professor of Geology at Dartmouth College after 1869; vice-president of the American Association (1883). He has written much on geology.

Hitchcock, Edward, an American geologist; born in Deerfield, Mass., May 24, 1793. In the beginning of his career he was pastor of a Congregational Church in Conway, Mass. He was made president of Amherst College in 1845, but resigned in 1854, continuing his professorship there till his death. Amherst College owes to him the founding of its Museum of Natural History, and his writings were among the earliest to call attention in the United States to the study of geology. His "Religion of Geology and Its Connected Sciences" marks a distinct epoch in scientific study in this country. He died in Amherst, Mass., Feb. 27, 1864.

Hitchcock, Ethan Allen, an American diplomatist; born in Mobile, Ala., Sept. 19, 1835; received an academic education and entered mercantile life; subsequently acting as president of railway and mining corporations. In 1897 he was made United States minister to Russia; in 1898, ambassador; and in 1899, Secretary of the Interior in President McKinley's Cabinet, holding the same office under President Roosevelt. He has shown praiseworthy resolution in 1903 in bringing about the prosecution of officials and others accused of defrauding Indians out of their lands.

Hitchcock, James Riley Wellman, an American writer on art; born in Fitchburg, Mass., July 3, 1857.

Hitchcock, Roswell Dwight, an American theologian; born in East Machias, Me., Aug. 15, 1817. He was long president of Union Theological Seminary. He died in Somerset, Mass., June 16, 1887.

Hittell, Theodore Henry, an American historian; born in Marietta, Pa., April 5, 1830. His home is in San Francisco. Besides valuable legal works he has published a critical review of "Goethe's Faust" (1872); the important "History of California," etc.

Hittites, the English name of a people who waged war with Egypt and Assyria for a thousand years, and who moved on parallel lines with the people of Israel from the call of Abraham to the Captivity. The Hittites have scarcely any record in classical history, but in late years we have much information respecting them from various sources.

Hivites, a Canaanitish people, the main body of whom lived in the region from Lebanon and Hermon to Hamath, but who had colonies, apparently isolated, in Southern Palestine, as at Gibeon.

Hoadly, George, an American jurist; born in New Haven, Conn., July 31, 1826; was graduated at Western Reserve College in 1844, and became a lawyer in 1847; was judge of the Supreme Court in Cincinnati, 1859–1866; member of the Ohio State Constitutional Convention of 1873-1874. Originally a Republican, he became a Democrat on the tariff issue; was governor of Ohio, 1883–1885; and began the practice of law in New York city in 1887. He died in Watkins, N. Y., Aug. 29, 1902.

Hoang-ho, a great river of China, and one of the most prominent features in the geography of that empire. Though broad and rapid, it is in many places so shallow as to be unfavorable for navigation. It is also liable to overflow its banks, so that it has been necessary, in many places, to raise dykes for the defense of the surrounding country. Its frequent overflows have caused vast destruction of life and property.

Hoar, Ebenezer Rockwood, an American jurist; born in Concord, Mass., Feb. 21, 1816; was judge of the Massachusetts Supreme Court in 1859–1869; United States attorney-general in 1869–1870; joint high commissioner on the Treaty of Washington in 1871, and member of Congress in 1873–1875. He was the son of

Samuel Hoar, a lawyer and member of Congress in 1835–1837, and his mother was a daughter of Roger Sherman. He died in Concord, Mass., Jan. 31, 1895.

Hoar, George Frisbie, an American statesman; born in Concord, Mass., Aug. 29, 1826; a brother of Ebenezer R.; was a member of Congress in 1869–1877; member of the Electoral Commission in 1877; and was elected United States Senator in the same year, and in 1883, 1889, 1895, and 1901. He is held in high esteem by members of all parties.

Hoarseness, an affection of the throat causing harshness and roughness of voice, due to irregular and imperfect bringing together of the vocal cords, most frequently from swelling of the mucous membrane of the cords, and excessive secretion of mucus in their neighborhood. It arises from a variety of causes, the most common of which is catarrh or cold.

Hoatzin, or **Hoactzin,** a singular gregarious South American bird, sometimes called the crested touraco. The plumage is brown streaked with white, and the head has a movable crest. It is of the size of a pheasant, and has an enormous crop with a very small gizzard.

Hobart, Garret Augustus, a Vice-President of the United States; born in Long Branch, N. J., June 3, 1844; was graduated at Rutgers College in 1863, and admitted to the bar in 1866; practised in Paterson, N. J.; was a member of the New Jersey Assembly in 1873–1874, and speaker during the latter year. Was counsel for and interested in prominent corporations. In November, 1896, was elected Vice-President of the United States. He died in Paterson, N. J., Nov. 2, 1899. He was said to be very wealthy.

Hobart Pasha, Augustus Charles Hobart, an English soldier; born in England in 1822. Entering the service of Turkey, he was raised by the Sultan to the rank of "Mushir" and Marshal of the Empire in 1881, being the first Christian to receive this honor. He died in 1886.

Hobbes, John Oliver, pseudonym of Pearl Mary Teresa Craigie, an American novelist and dramatist; born in Boston, Mass., Nov. 3, 1867. In 1887 she married Reginald Walpole Craigie, from whom she obtained a divorce and the custody of her child, in July, 1895. She was educated in Paris and London. Her works are popular.

Hobbes, Thomas, an English philosopher; born in Malmesbury, in 1588. He lived on intimate terms with Bacon, Ben Jonson, and all the distinguished men of his time; he became tutor to the Prince of Wales, afterward Charles II., and though many of his philosophical and political opinions have been condemned, he must be considered the father of psychology, and the first great English writer on the science of government. He died in 1679.

Hobson, Richmond Pearson, an American naval officer; born in Greensboro, Ala., Aug. 17, 1870; was graduated at the United States Naval Academy in 1889, and received further training in the Ecole d'Application du Genie Maritime, Paris. In 1894–1895 he served in the Bureau of Construction and Repairs of the Navy Department. Subsequently he originated a post-graduate course for such officers as intended to study naval construction, and conducted the course in 1897–1898. At the outbreak of the Spanish-American War he was promoted lieutenant, and assigned to duty on the flag-ship "New York," with which he participated in the blockade of Santiago Harbor, the bombardment of Matanzas, and in the naval demonstration against San Juan, Porto Rico. The event, however, with which his name is most intimately connected was the sinking of the collier "Merrimac" on June 3, 1898, in the narrow entrance of Santiago Harbor, with the intention of preventing the Spanish fleet from leaving the inner bay. As the "Merrimac" was sinking he and seven volunteers who had accompanied him leaped overboard and were picked up by the Spaniards and imprisoned for a few weeks, but were treated with kindness by the order of Admiral Cervera. Later he went to Manila, where he directed the raising and repairing of the Spanish ships sunk in the engagement with Admiral Dewey on May 1, 1898. He returned to the United States in 1901. He the author of "The Disappearing un Afloat," "The Sinking of the errimac," etc.

Hobson's Choice, a choice withut an alternative; that which is tenered, or nothing; the one thing or one. This phrase is said to have origated from one Hobson, a livery-stable eeper at Cambridge, England, who bliged each customer requiring the ire of a horse to take the next in urn, or that which stood nearest the table-door.

Hoche, Lazare, a general in the rench Revolutionary War; born in ontreuil near Versailles, June 25, 768. He took service in the regiient of French guards when 16 years ld. On the outbreak of the Revoluion he joined the popular party. In 796 he conceived the plan of attackng Great Britain by making a decent on Ireland. He accordingly set ail in December from Brest, but a torm dispersed the fleet; he found imself alone near the coast of the nemy, and he was obliged to return rom his expedition without having ven effected a landing. He died sudenly Sept. 18, 1797.

Hockey, a game of ball played with club curved at the lower end, by a umber of persons divided into two arties or sides; and the object of ach side is to drive the ball into that art of the field marked off as their pponents' goal. In the United States t is played by school boys, who someimes call the game "shinney."

Hodge, Charles, an American heologian; born in Philadelphia, Pa., ec. 28, 1797. He was graduated at rinceton College in 1815, and joined he teaching staff of the theological eminary in 1820. He founded the 'Princeton Review"; was the author f numerous theological essays, comentaries, and a work on "Systemtic Theology." He died in 1878.

Hoe, Richard Marsh, an Amerian inventor; born in New York city, ept. 12, 1812. In 1846 he perfected rotary printing-press which was alled "Hoe's lightning press." Subequently he invented the Hoe weberfecting press. These were especially dapted to newspaper printing and ade a revolution in that art. He ied in Florence, Italy, June 7, 1886.

Hofer, Andreas, a Tyrolese patriot; born in St. Leonard, in the valley of Passeyr, in 1767. When the Tyrol, long a part of the Austrian dominions, was given by the treaty of Presburg to the King of Bavaria, then the ally of Napoleon, the Tyrolese revolted, and Andreas Hofer became their leader. Within a week from the outbreak of the insurrection, early in April, 1809, the Bavarian forces were everywhere defeated and the Tyrol freed. Three French armies then invaded the province, and after temporary success on their part, Hofer won the victory of Innspruck, and again freed his country. By the armistice of Znaim, agreed to after the victory of Napoleon at Wagram, the Austrians were compelled to quit the Tyrol. A second French invasion ended in defeat, and the people were a third time freed. For a few weeks Hofer was, virtually, sovereign of his country; but on the renewed invasion of French and Bavarians, he was betrayed to his enemies, condemned by a court-martial at Mantua, and shot Feb. 20, 1810.

Hoffman, Charles Fenno, an American poet and novelist; born in New York city, in 1806. He was originally a lawyer. He founded the "Knickerbocker Magazine," edited the "Literary World," and was owner and editor of the "American Magazine." He died in Harrisburg, Pa., June 7, 1884.

Hoffman, David, an American lawyer; born in Baltimore, Md., Dec. 25, 1774. He was Professor of Law in the University of Maryland 1817–1836. He died in New York, Nov. 11, 1854.

Hoffman, Wickham, an American diplomatist; born in New York city, April 2, 1821. He served in the Civil War, was secretary of legation at Paris, London, St. Petersburg, and minister to Denmark. He died in Atlantic City, N. J., May 21, 1900.

Hoffman, Friedrich, a German physician; born in Halle, Saxony, 1660. On the establishment of the University of Halle, he was appointed primary Professor of Medicine and Natural Philosophy; and thrice held the situation of rector. Later he was elected a member of various scientific associations in London, Berlin, and St.

Petersburg; and appointed physician to the King of Prussia who gave him the title of first physician and aulic councillor. His works are very numerous, the most important being his "System of Rational Medicine" and "Consultary Medicine." He died in 1742.

Hog, in zoölogy, Sus scrofa. It has two large teeth or tusks in the upper, and two in the lower jaw. The body is covered with bristles. When wild it is of a dark brindle hue, with soft short hairs beneath its bristles. In domestication the ears become long, sharp-pointed, and pendent. The hog when wild feeds on beech-mast, chestnuts, acorns, crabs, haws, sloes, hips, grass, and roots. When it can obtain miry ground to wallow in, it regales itself with frogs, ferns, and the roots of rushes. In domestication it will eat almost anything in the least digestible — an uncleanly but valuable scavenger. The flesh of the hog when fresh is called pork, when cured, ham or bacon. The ordinary lard is used for culinary purposes, the fat of the bowels for greasing axles. The bristles are made into brushes, pencils, etc.; the skin into leather. The hog is wild in many parts of the world. The horned hog, or babiroussa, is a native of the Indian archipelago. Its upper tusks are very long and curve backward. It has long legs and the flesh is good eating.

Hogarth, William, a truly great and original painter of life and manners; born in London, England, in 1697. Having been accidentally present at a drunken fray one Sunday at a public house on the road to Highgate, his humor in sketching characters was first displayed by his drawing one of the unfortunate combatants streaming with blood. Soon after he produced a print of Wanstead Assembly. In 1720 he commenced business for himself, painting portraits, and making designs and book plates for the booksellers, etc. He gradually acquired fame and a comfortable fortune, his "Rake's Progress" and similar works attracting universal attention. In 1762 his health began to give way. He complained much of an inward pain, which was followed by a general decay. The last year of his life he spent chiefly in Chiswick in retouching his plates, in which la he was assisted by several other gravers. He died there on Oct. 1764. In originality of imaginat he may be placed on an equa with Shakespeare, and in point execution as a painter he is supe to most artists of the age in wh he lived.

Hoge, Moses Drury, an Ameri clergyman; born in Hampden-Sid Va., Sept. 17, 1819; was graduate Hampden-Sidney College in 1839, at Hampden-Sidney Seminary in 18 and was pastor of the Second Pres terian Church in Richmond, Va., f 1845 till his death. He was an quent and energetic preacher; chaplain at the camp of instruct in Richmond during the Civil W ran the blockade at Charleston 1864; and went to London, where collected 10,000 Bibles, 50,000 Te ments, and 250,000 portions of Bible, which he distributed among C federate soldiers. During the G eral Assembly of the Southern P byterian Church in 1874, he succee in establishing friendly relations w the Northern Church. He died Richmond, Va., Jan. 6, 1899.

Hogg, James, a Scotch poet; b in Selkirkshire in 1770. After ceiving a very scanty education he gan to earn his bread by daily la as a shepherd. His early rhymi brought him under the notice of Walter Scott, by whose advice he p lished a volume of ballads under title of "The Mountain Bard." appearance of the "Queen's Wake" 1813, with its charming ballad of meny, established Hogg's reputat as a poet. He died in Altrive, on Yarrow, in 1835.

Hohenlohe - Schilling furst, Clovis Karl Victor, Pri von, a German statesman; born Ma 31, 1819. In 1874 he was chosen succeed Count Arnim as the Germ ambassador to France, and held post till 1885, when he became G ernor-General of Alsace-Lorrai When the crisis, which resulted in resignation of Count Caprivi Count Eulenberg arose, in 1894, was appointed Chancellor and intr ed by the Emperor with the cont uance of Count Caprivi's policy. resigned in 1900.

Hohenstaufen, a famous German amily, founded by Frederick von Buren, who lived about 1040.

Hohenzollern, a small territory of Germany, since 1852 an administraive division of Prussia. It consists f a long, narrow, irregular strip of ountry, entirely surrounded by Wuremberg and Baden. Area, 450 square miles. Pop. 65,752. The princely amily of Hohenzollern dates from Thassilo, Count of Zollern, who died bout A. D. 800. There have been sevral lines and branches, the main one eing represented by the present imerial family of Germany.

Holbein, Hans, or **Johann,** a German painter; born in Augsburg, bout 1495. He learned the elements f his art from his father, whom he oon excelled. At the recommendation f Erasmus he came to England, and was employed first by Sir Thomas More, who introduced him to Henry VIII. He rose to the zenith of fortune n that monarch's court, and painted a great number of portraits which are still considered masterpieces of art. He painted some religious and historical pieces; his masterpiece is perhaps the ' Family of the Burgomaster Meyer," now in the Gallery of Dresden. Holbein is also the author of a very celebrated series of designs, known as the ' Dance of Death," cut in wood and first published at Lyons in 1538; afterward copied by Hollar and others. He died of the plague in 1543.

Holberg, Ludwig, a Danish poet; born in 1684. His works may be divided into four classes — poems, stage pieces, philosophical treatises, and historical works. His poems are chiefly of a satirical nature. He died in Copenhagen, Jan. 27, 1754.

Holcombe, Chester, an American diplomatist and author; born in Winfield, N. Y., Oct. 16, 1844; was graduated at Union College in 1861; interpreter and secretary to the United States Legation in China, 1871–1885. He became an authority on the Chinese and Chinese affairs, and in 1896 acted for the Chinese government in its financial embarrassments.

Hold, the whole interior cavity or belly of a ship, or all that part of her inside which is comprehended between the floor and the lower deck throughout her length.

Holden, Edward Singleton, an American astronomer; born in St. Louis, Mo., Nov. 5, 1846; was graduated at Washington University in 1866, and at the United States Military Academy in 1870; Professor of Mathematics at the Naval Academy in 1873–1881; president of the University of California in 1883–1888; director of the Lick Observatory in 1888–1898; he was then appointed astronomer of the Smithsonian Institution.

Holden, Sir Isaac, an English inventor; born in Hurlet, England, May 7, 1807. While a worker in a cotton mill in Paisley, he fitted himself for the post of a teacher. He hit on the idea of putting sulphur under explosive material, which solved the problem of the lucifer match. Holden was not himself aware that lucifer matches had been made nearly two years before by John Walker, a chemist. While bookkeeper in a worsted mill, Holden became possessed with the ambition of inventing wool-combing machinery. After the expenditure of about $250,000 in experiments, Holden's wool-combing machinery brought him both fame and fortune. He was afterward a member of Parliament. He was made a baronet in 1893, and died Aug. 13, 1897.

Holder, Charles Frederick, an American naturalist; born in Lynn, Mass., 1851. He was assistant at the American Museum of Natural History, New York, from 1870 to 1877.

Holinshed, Raphael Ralph, an English chronicler; lived in the age of Queen Elizabeth. He is best known by his " Chronicles of Englande, Scotlande, and Irelande," the first edition of which, known as the " Shakespeare edition," because it is the one which is supposed to have been used by him in collecting material for his historical plays, was published in London in 1577. He died about 1580.

Holkar, a powerful Mahratta family, now in possession of the protected State of Indore in Hindustan. It was founded in the first half of the 18th century by a man of humble origin, a native of the town of Hol in the Deccan, from which circumstance the family name is derived.

Holland, The, an American submarine torpedo boat; length, 55 feet; diameter, 10¼ feet; displacement, 75 tons; hull made of steel; motive power, gas engine at surface of water, and motor run by storage batteries, when boat is submerged.

Holland, Frederick May, an American clergyman and author; born in Boston, May 2, 1836.

Holland, Henry Richard Vassall Fox, Lord, an English publicist; born in 1773. He succeeded to the peerage by the death of his father when less than one year old. In 1806 he was commissioner for settling disputes with the United States; lord privy seal in 1806–1807; and chancellor of the duchy of Lancaster. He made Holland House the resort of wit, talent, and beauty. He died in 1840.

Holland, Sir Henry, an English physician; born in Knutsford, Cheshire, Oct. 27, 1788. His "Medical Notes and Reflections," published in 1839, consist of 34 essays on various departments of medicine and psychology; it has passed through several editions. He died in London, Oct. 27, 1873.

Holland, Josiah Gilbert, an American author; born in Belchertown, Mass., July 24, 1819. He was graduated at the Berkshire Medical College, at Pittsfield, in 1844. He soon abandoned his profession, however, and after 15 months as a school superintendent at Richmond, Va., became assistant editor of the Springfield "Republican," of which he was part proprietor also from 1851 to 1866. In 1870 with Roswell Smith and the Scribners, he founded "Scribner's Monthly," which he conducted successfully till his death, Oct. 12, 1881.

Holland, Thomas Erskine, an English jurist; born in Brighton, July 17, 1835. He was educated at Oxford. He was a member of several foreign societies, and the recipient of honorary degrees from Oxford, Bologna, and Dublin. His memorable work is "The Elements of Jurisprudence" (1880), now in its eighth edition, which has become a text-book in some American universities.

Holleben, Theodore von, a German diplomatist; born in Stettin, Pomerania; was graduated at the universities of Heidelberg, Berlin, and Gottingen; entered the Body Guard Hussar Regiment; took part in t Franco-Prussian War, and disti guished himself during the siege Paris and in the battles of Bapaur and St. Quentin. He entered tl diplomatic service in 1872; w charge d'affaires at Peking, China, 1873–1874, and at Tokio, Japa in 1875; minister at Buenos Ayres 1876–1884; at Tokio in 1885–188 and at Washington, D. C., in 189 1893; and became ambassador to tl United States in 1897. At the cor mand of Emperor William he, togeth with Secretary Hay, of the State D partment, had charge of the arrang ments for the official reception of tl emperor's brother, Admiral Prin Henry, in February, 1902. He w relieved as ambassador to the Unit States in 1903.

Holley, Alexander Lyman, American metallurgist; born in Lak ville, Conn., July 20, 1832; was gra uated at Brown University in 185 became editor of "The Railroad Adv cate" in 1856, and soon changed i name to "The American Engineer About 1863 he went to England ar purchased for Corning, Winslow Co. the Bessemer patents for the ma ufacture of steel. The first Bessem works were built by him in Troy, Y., in 1865, and the second plant Harrisburg, Pa., in 1867. He w Lecturer on the Manufacture of Ir and Steel at Columbia University 1879–1882. Holley secured about patents, of which the most importa was probably that for the detach converter-shell, an improvement in tl Bessemer process. He died in Broo lyn, N. Y., Jan. 29, 1882. A coloss bronze bust of him has been placed Washington Square Park, New Yo city, as a testimonial from the mecha ical engineers of the United Stat and Europe.

Holley, Marietta, an Americ author; born in Ellisburg, N. Y., 1844.

Hollister, Gideon Hiram, American lawyer and author; born Washington, Conn., Dec. 14, 181 His home was in Litchfield, Conn. was minister to Haiti in 1868–186 He died in Litchfield, March 24, 188

Holloway, Mrs. Laura (Carter an American author; born in Nas ville, Tenn., Aug. 22, 1848. She w

r 12 years associate editor of the
rooklyn "Daily Eagle."

Holloway, Thomas, an English
ilanthropist; born in 1800. He
unded a sanatorium or asylum for
e insane, and hospitals for incur-
oles and convalescents, at Egham,
urrey, in 1873; and also at the same
ace the Royal Holloway College, de-
gned to supply the best and most
itable education for women of the
iddle classes. The college, which
as opened by Queen Victoria in 1886,
ntains a collection of pictures of the
lue of $500,000. The total cost of
e two institutions was $5,000,000.
e died in 1883.

Hollow Ware, the trade term for
l kinds of vessels made of cast or
rought iron, and used for cooking
nd other purposes.

Holly, a shrub or small tree, 10
40 feet high, with glossy leaves,
e lower ones uniform, with waved
inous cartilaginous margins, the up-
er ones sometimes entire; flowers in
nbellate cymes, white, often subdiœ-
ous; fruit a scarlet or more rarely
yellow drupe, with four bony fur-
wed stones. The beautiful white
ood of the holly is valued by cabinet-
akers for inlaying, the bark is used
the manufacture of birdlime, the
rries are a violent purgative. The
aves and berries form, with ivy, the
incipal material of Christmas deco-
tion. The North American holly is
und along the entire Atlantic coast
the United States.

Holly, Willis, journalist and
blic official; born Stamford, Conn.,
ly 4, 1854; entered the New York
Sun" office as a boy, and grew to
Albany correspondent and political
riter. Secretary to Mayors Grant
nd Gilroy of New York city, and
cretary to the Park Commission,
98 to 1901, and author of volumi-
ous reports on the vast and magnifi-
nt system of New York public parks.

Holly, James Theodore, an
merican clergyman; born in Wash-
gton, D. C., Oct. 3, 1829. The son
Roman Catholic (colored) parents,
withdrew from the Catholic Church
nd entered the Protestant Episcopal
hurch in 1851. He studied for the
iesthood; was ordained, and in 1856
came rector of St. Luke's, New Haven, Conn. In 1874 he became Episcopal missionary bishop of Hawaii.

Hollyhock, a biennial plant. It is a native of China, and is a frequent ornament of gardens. There are many varieties, with single and double flowers, characterized by the tints of yellow, red, purple and dark purple approaching to black. It reaches a height of eight feet or more.

Holmes, Abiel, an American Congregational clergyman and author; father of Oliver Wendell Holmes; born in Woodstock, Conn., Dec. 24, 1763. He was pastor of the First Church, Cambridge, Mass. He died in Cambridge, Mass., June 4, 1837.

Holmes, Mrs. Mary Jane (Hawes), an American novelist; born in Brookfield, Mass. A voluminous writer, her works are mostly domestic in character, and have had a large circulation.

Holmes, Oliver Wendell, an American physician, surgeon and author; born in Cambridge, Mass., Aug. 29, 1809. He was graduated at Harvard. He began the study of law, but in a short time relinquished it for that of medicine. In 1839 he became Professor of Anatomy and Physiology in Dartmouth College, N. H., but resigned after two years' service in order to devote himself to practice in Boston. In 1847 he was appointed to the chair of anatomy at Harvard, a position which he filled till 1882. At the time of the murder of Parkman by Professor Webster in the Harvard Medical College Holmes was delivering a lecture in an adjoining room. He wrote voluminously both in prose and verse, and shone as a prominent figure in the famous group associated with the "Atlantic Monthly." His most original work is "The Autocrat of the Breakfast Table," which first appeared in the "Atlantic Monthly." This professes to be the table talk of the "Autocrat" (who lives in an American boarding house), and the plan gives the author scope for touching on topics of the most varied character in a vein at times serious, at times humorous or witty, but always striking and original, while poems of high excellence are also interspersed. The poet's lyric entitled, "Old Ironsides," written when the breaking up of the frigate "Constitution" was contemplated, became very popular and saved the famous vessel from destruction. He died Oct. 8, 1894.

Holmes, Oliver Wendell, Jr., an American jurist; son of Dr. Oliver W. Holmes; born in Boston, Mass., March 8, 1841; was graduated at Harvard College in 1861. He had hardly been awarded his degree at Harvard in 1861 when he enlisted in the 20th Massachusetts regiment. When he was wounded at Antietam, Sept. 17, 1862, he was a captain in his regiment. When he was mustered out he was a brevet lieutenant-colonel. Associate justice of Massachusetts Supreme Court, 1882–1889; became chief-justice, Aug. 2, 1899; wrote "The Common Law," etc.

Holmes, William Henry, an American geologist; born near Cadiz, Ohio, Dec. 1, 1846. He was graduated at the McNeely Normal College in 1870. For the purpose of archæological study, he made a visit to Mexico in 1882, and in 1889 he was appointed to supervise the archæological explorations of the bureau of ethnology. In 1892 he became Professor of Archæological Geology in the University of Chicago. He is an authority on the subject of aboriginal art.

Holocaust, a sacrifice, the whole of which was consumed by fire, nothing being retained; such sacrifices were practised by the Jews. The word is now sometimes applied to a general sacrifice of life or slaughter.

Holograph, any writing, as a letter, deed, or will, wholly written by the person from whom it bears to proceed.

Holst, Hermann Eduard von, a German-American historian; born in Fellin, Livonia, Russia, June 19, 1841. Coming to the United States in 1866, he engaged in literary work and lecturing; he returned to Europe, becoming professor in the universities of Strasburg (1872) and Freiburg (1874); appointed Professor in the University of Chicago (1892), he came to this country again. He has written: "Constitutional and Political History of the United States"; "Constitutional Law of the United States"; "Life of John Calhoun," etc.

Holstein, a princely German f
ily, which includes the royal line
Denmark, the collateral branches
Holstein - Sanderburg - Augustenb
and the ducal race of Holstein-
torp, which last is again divided
two branches — the elder being
reigning line of Russia, while
younger is represented by Gusta
Prince of Wasa, a field marshal in
Austrian service, and also by the
enburg family.

Holy Alliance, a league propo
by Alexander I., Emperor of Rus
Sept. 26, 1815, after the defeat
Napoleon at Waterloo had cleared
way for the execution of his desire
establishing a settled peace in Eur
Alexander, Francis of Austria,
Frederick William III. of Prus
signed with their own hands and w
out the countersign of a minister
act establishing this alliance, whic
said to have been in the handwrit
of the first. It consisted of a decl
tion that in accordance with the
cepts of the Gospel of Jesus Christ
principles of justice, charity,
peace should be the basis of t
internal administration, and of t
international relations, and that
happiness and religious welfare of t
subjects should be their great obj
It was also stipulated that the t
sovereigns should invite others to
come members of the Holy Allia
In Russia and Germany its princi
were not discussed except in a sp
of eulogy, but they were uncompro
ingly condemned in Great Britain
many of her foremost statesmen.
events of 1848 broke up the Holy A
ance. It had previously lost much
its authority from the death of Al
ander and the French revolution
1830. Part of the aim of the H
Alliance was the extension of
monarchical system to America.
was defeated by the Monroe doctri

Holy City, an appellation given
different peoples to that particular
whence proceed all their religious t
ditions and worship. By Jew
Christian, Jerusalem is so named;
Catholics, Rome; by Mohammeda
Damascus, Mecca, and Medina; by
Hindus, Benares; by the Mohamm
dans of India, Allahabad; by the
cient Incas, Cuzco.

Holy Coat, a coat, alleged to be e seamless vestment worn by Jesus His trial, and for which, after His ucifixion, the soldiers cast lots (John x: 23, 24). Several exist, the cus- dians of each claiming that it is the nuine one.

Holy Cross, the alleged actual oss on which Christ suffered. Ru- us, Socrates, Sozomen, Theodoretus, d others, relate the discovery (about D. 326) by Helena, mother of Con- ntine, of three crosses, with the in- ription in Greek, Hebrew, and Lat- The question which of the three s the cross of Jesus was claimed be settled when, on the suggestion Marcarius, Bishop of Jerusalem, al was made which could work mir- les, and it was declared that only e had this power. Eusebius, who s well acquainted with the parties ncerned, seems never to have heard these alleged discoveries.

Holy Cross College, an educa- nal institution in Worcester, Mass.; nded in 1843 under the auspices of e Roman Catholic Church.

Holy Ghost, the Holy Spirit; the ird person in the Trinity, whom the viour promised to send to comfort s disciples (John xiv: xv:, and i.). The doctrine of the "Filioque," serting the "Procession" from the ther and the Son, formed one of the ief points of dispute which led to the paration of the Greek and Roman urches — the former contending at he proceeds from the Father only.

Holy Ghost, Order of, an order male and female hospitallers, found- by Guy, son of William, Count of ontpellier, toward the end of the th century, for the relief of the or, the infirm and foundlings. After e middle of the 18th century it was ited with the order of St. Lazarus Clement XIII. This was also e name of the principal military or- r in France instituted in 1578 by enry III., abolished in 1789, re- ved at the Restoration, and again olished in 1830.

Holy Ghost Plant, a tropical wer growth. In Mexico, Central d South America, and in some parts Cuba and Jamaica this beautiful ant grows in great profusion. This ant, also known as the botanical dove, is called the Holy Ghost plant on account of the shape of the flower, which has the appearance of a dove with expanded wings hovering over the stalk. The entire flower, which is pure white, opens from the end of a long green stem and is very fragrant.

Holy Grass, a sweet-smelling grass about a foot high, with a brownish glossy lax panicle. It is sometimes strewed on the floors of churches on festival days, whence its name.

Holy Land, a name generally given among modern peoples to Palestine, the scene of the Christ's birth, ministry, and death. Arabia is so named by Mohammedans because Mohammed was born there. The Buddhists of China call India the Holy Land, because it was the country of Sakya Muni.

Holy League, a league, founded in 1576, to prevent Henry of Navarre, who at the time was a Protestant, from ascending the French throne. At his becoming a Roman Catholic, in 1593, the league was dissolved, and he became king under the title of Henry IV.

Holy Mountain, a name given by modern Greeks to Mount Athos. The flanks of this eminence are dotted with 22 convents, besides a number of chapels, cells, grottoes, caves, etc., the abodes of over 3,000 monks and hermits. It was the convents of Mount Athos that yielded so many priceless MSS. of ancient literature.

Holy of Holies, in Judaism, the inner or most sacred apartment, first to the Tabernacle, then of the Temple, into which none was permitted to enter but the high priest, and he only once a year, and then "not without blood." It was separated from the Holy Place or Outer Chamber by a veil.

Holy Places, the sites in Palestine connected with the ministry and death of Christ, especially those traditionally located within the Church of the Holy Sepulcher. The Greek and Latin Churches both claim the custody of these sacred spots, the Russians supporting the pretensions of the former, the French those of the latter. A dispute about these holy places led, in 1853, to the Russo-Turkish War, followed, in 1854, by the Crimean War.

Holy Roman Empire, a title which the German Empire received in 902 when Otho I. was crowned at Rome by Pope John XII. It came to an end when Francis II. became hereditary emperor of Austria in 1804.

Holy Rood, a cross or crucifix; especially one placed on the rood-beam in churches over the entrance to the chancel. Holy rood day is a festival kept on Sept. 14, in commemoration of the exaltation of the Saviour's Cross. Also called holy cross day.

Holy Sepulcher, the sepulcher in which the body of Jesus was laid between His death and His resurrection. Also the Byzantine Church, built at Jerusalem on what is by some believed to be the site of the sepulcher. The Order of the Holy Sepulcher is an order founded by Godfrey of Bouillon, the commanding chief, revived by Pope Alexander VI., in 1426, and reorganized in 1847 and 1868.

Holy Thursday, in the Protestant Episcopal Church, Ascension Day; in the Roman Church the Thursday in Holy-week, Maundy Thursday.

Holy Water, in the Roman Catholic Church, water which has been blessed, or consecrated, by an appropriate service, and used to sprinkle the worshipers and the things used in the church.

Holy Week, or **Passion Week,** the week which immediately precedes Easter, and is devoted especially to commemorate the passion of our Lord. The days more especially solemnized during it are Spy Wednesday, Maundy Thursday, Good Friday, and Holy Saturday. It is an institution of very early origin, and is known as Great Week, Silent Week, Penitential Week, etc. Spy Wednesday was a name given in allusion to the betrayal of Christ by Judas Iscariot. Maundy or Holy Thursday specially commemorates the institution of the Eucharist.

Homage, in feudal law, a formal acknowledgment made by a feudal tenant to and in presence of his lord on receiving the investiture of a fief or coming to it by succession, that he was his vassal.

Home, Daniel Dunglas, a Scotch spiritualist; born near Edinburgh, March 20, 1833. He was taken by an aunt to the United States, where by 1850 he had become a famous mediu He began the study of medicine, l was persuaded by his friends to pr tise spiritualism instead; and in 18 he removed to London to carry on "mission." He made many conver though not all the great people claimed. He was presented at seve courts, and to the Pope; and he joi the Roman Catholic Church, but v ultimately expelled for spiritualis practices. He died in Auteuil, Ju 21, 1886.

Home, Mark Antony de Wol an American clergyman; born in Bi tol, R. I., April 5, 1809; was gr uated at Brown in 1828; and becam Protestant Episcopal priest in 18 Having held various rectorships was in 1865 consecrated Bishop Central Pennsylvania. He died Bristol, R. I., July 31, 1895.

Homer, a poet of ancient Gree whose birthplace and date are enti unknown. Seven cities or more, ancient Greece, claimed him as native, and he is generally con tured to have lived between 1000 B and 700 B. C. His greatest works the "Iliad" and the "Odyssey." " "Iliad" is the story of the siege Illium (Troy), and the attempt to cue Helen, the wife of Menelaus, K of Sparta, whom Paris, son of Pri King of Troy, had abducted.

The "Odyssey" relates the ret through many hardships and adv tures, of Odysseus (Ulysses) to home after the siege of Troy, his come by his faithful wife Penel and punishment of her presumptu suitors. The style of these poem simple and noble, the action ra the theme dramatic and heroic. T main author, usually called Ho was, by all the ablest critical opi of generations, one of the great ma poets of the world. The busts of mer and all representations are, course, wholly ideal.

Home Rule, in general the con of its own affairs by a separate p cal State; in British politics, a m ure which has been more especi advocated in regard to Ireland. leading feature of the Irish Home party seems to be the establish of a native Parliament in Irelan conduct all local and internal leg tion, leaving the general political

ment of the empire to an imperial
:liament. In 1893 a Home Rule bill
s passed by the Commons; but de-
ted by the Lords. In 1898, how-
r, an act passed both houses of Par-
nent providing for a system of free
al self-government in Ireland. The
follows the main lines of the legis-
ion adopted for England and Scot-
d, accompanied only by such varia-
ns as are necessary owing to the
cial circumstances of Ireland. The
v act, as in England and Scotland,
ts the duties of local government
on bodies popularly elected. There-
e the local administration is now
the hands of four bodies—(a)
inty council, (b) urban district
incils, (c) rural district councils,
d (d) boards of guardians; but
se may be narrowed down to three
the majority of cases, because mem-
s of the rural district councils do
o represent the area for which they
e elected as guardians, and where
e union is within an administrative
inty the union must be coincident
th the rural district, so that the
rds of guardians are really, as in
gland, the district councils acting
der another name.

Home Sickness, in medicine, nos-
gia, a disease arising from an in-
ise and uncontrolled feeling of grief
a separation from one's home or
tive land.

Homestead, a city in Allegheny
, Pa., 10 miles S. E. of Pittsburg.
is the trade center of the surround-
; country; is the seat of the Car-
gie steel works; and has several
iss works and machine shops. On
ly 6, 1892, labor troubles culminat-
in a serious riot, provoked by the
roduction of Pinkerton detectives
the mills. The riot was subdued
th much difficulty, and considerable
s of life by the State miltia. Pop.
900) 12,554.

Homestead and Land Laws,
vs enacted by Congress or by State
gislatures with a view to providing
d securing persons or families the
ssession of a home and land. Under
e United States laws any citizen or
rson who declares intentions to be-
me a citizen. male or female, 21
ars old, or head of a family, may
come the possessor of a homestead
80 or 160 acres, by occupation and cultivation, to be taken from unreserved public lands, surveyed or unsurveyed. Fee of $5 or $10 is required to be paid of filing affidavit of settlement, citzenship, age or family status. Total fee is from $26 to $34, according to the land district. Five years' residence and cultivation are required, but only three are demanded where 5 or 10 acres of forest trees have been cultivated. Ex-Union veterans or their heirs obtain patent one year after residence. Benefits are limited to one claim, except that veterans who have made one land settlement may also take a homestead claim. Under timber culture provisions homestead locators may secure another 160 acres, including timber area, by cultivating 40 acres of trees. A homestead is free from debt liability before patent issues. Locator may, on proof of settlement six months after occupancy, buy said land at preëmption price. The present law was signed by President Lincoln, May 20, 1862.

Public lands are surveyed into "hundreds," 10 miles square; then into "sections" of 1 mile square, again subdivided into quarters, and down to eighths. This is known as the rectangular system. A general land-office, forming a bureau of the Interior Department, is in charge of land administration. Each State and Territory has a surveyor-general, and each congressional district a land-office. In the Territories these are provided as required. A large portion of the domain acquired from Mexico still remains subject to private grants. The land laws of Hawaii were drawn up with the design of protecting small holders.

Homicide, the killing of any human being. Homicide is of three kinds — justifiable, excusable, and felonious. The first has no stain of guilt; the second very little; but the third is the highest crime that man is capable of committing against a fellow-creature. Justifiable homicide is of various kinds, including such as arise from unavoidable necessity or accident, without any imputation of blame or negligence in the person killing. Homicide in the course of justice, in the execution of any criminal or civil process, is of this kind. The necessity must, however, be real and apparent in all cases of this sort. Homicide is justifiable in the prevention of any atrocious crime, as an attempt to murder, or to break into a house during the night. Justifiable homicide does not apply to crimes which are unaccompanied by violence, such as the picking of pockets, etc. The general principle of the law is, that when a crime in itself capital is endeavored to be committed by force, it is lawful to repel that force by the death of the party attempting it. Excusable homicide is committed either by misadventure or in self-defense. Homicide by misadventure is where a man doing a lawful act, without any intention of hurt, and using proper precaution to prevent danger, unfortunately kills another; as when a man is at work with a hatchet, the head flies off and kills a bystander; for the act is lawful, and the effect is merely accidental. As prize-fighting and sword-playing are unlawful, if either of the parties engaged be killed, such killing is felony or manslaughter. Homicide in self-defense, from a sudden affray or quarrel, is rather excusable than justifiable. Felonious homicide is an act of a very different character from the two former, being the killing of a human creature, of any age or sex, without justification or excuse. It is divided into three classes — murder, manslaughter, and self-destruction.

Homiletics, the art of preaching; that branch of practical theology which teaches the principles of adapting the discourses of the pulpit to the spiritual benefit of the hearers, and the best methods which ministers of the Gospel should pursue for instructing their hearers by their doctrines and example.

Homily, a sermon addressed to a congregation of people; a plain, familiar discourse on some religious topic. The "Book of Homilies," is the name given to a collection of sermons, setting forth the principal doctrines of Christianity, and pointing out the principles of Protestantism, of which the first part was published by Archbishop Cranmer in the reign of Edward VI., and the second by order of Convocation in that of Elizabeth.

Homœopathy, the system of medicine which aims at curing diseases
by administering medicines which p
duce symptoms similar to those wh
they are designed to remove. The L
in dictum on the subject is, wl
translated, "like cures like."
founder was Samuel Hahnema
(1755–1843); born in Meissen in U
per Saxony. The system has ma
advocates in the United States a
abroad.

Honduras, a republic of Cent
America; bounded by Nicarag
Guatemala, the Caribbean Sea and
Pacific Ocean; area, 46,250 squa
miles; pop. (1900) 587,500; capit
Tegucigalpa. The country is gen
ally mountainous, and is traversed
the Cordilleras, connecting the A
des on the S. with the Sierra Ma
on the N. The rivers are numero
though small. The republic has ne
ly 500 miles of sea coast with num
ous fine harbors.

The climate is mild in the higher
gions and semi-tropical in the lo
lands. Agriculture is the princi
occupation of the people. The ch
products are bananas, tobacco, sug
maize, coffee, indigo, rice, and whe
The mineral resources are great; go
platinum, silver, copper, lead, zi
iron, antimony, nickel and cobalt
ing found in nearly every departme
The gold production is estimated
value from $150,000 to $250,000
annum.

The foreign commerce is carried
principally with the United Sta
and Great Britain. The principal
ticles of export are bananas, catt
coffee, cocoa, and wood. The met
lic exports are gold, silver, and oth
metals.

Under the charter of 1894 the g
ernment is that of a republic. T
legislative power is vested in a Co
gress of Deputies, one for every 10,0
inhabitants. The executive author
rests with the president elected by po
ular vote every four years, assisted
a Council of Ministers, to whom a
intrusted the Departments of Interi
Public Works, War, Finance, Pub
Instruction, and Justice. As a mat
of fact the changes of government a
usually decided by military reso
tions, and the country is the favor
foreign resort of American despe
does and outlaws, some of whom wi
considerable influence there.

The constitution grants freedom to l creeds, but the Roman Catholic the strongest. Instruction is free d compulsory, between the ages of and 15 years, and entirely secular.

Honduras was discovered by Colum-s in 1502, conquered by Cortez in 523, joined the Republic of Central merica in 1821 and became an in-pendent State in 1839. In 1894 the esent constitution was adopted and 1897 Honduras became a part of e Greater Republic of Central Amer-a, which soon dissolved.

Honduras, Bay of, a wide inlet the Caribbean Sea, having on the Guatemala and Honduras, and on e W. British Honduras and Yuca-n.

Honey, a product primarily of a egetable character, in many plants xisting at the base of the corolla, metimes in a more or less elongated ibe, closed at the lower end, called by innæus, on account of its contents, nectary. Neuter bees collect it to ore against winter, and swallowing by means of their proboscis, trans-r it to a distended portion of the sophagus, called the honey-bag. There ertain chemical changes take place pon it, so that when placed, as it ltimately is, in the honey-comb, it is ot, as at first, exclusively a vegetable roduct. When elaborated by young ees it is whiter than in other cases, nd is called virgin honey. When btained by the bees from some plants, is poisonous. Honey is used as n article of food.

Honey Ant, an ant inhabiting lexico, and living in communities in ubterranean galleries. In summer a ertain number of these insects secrete kind of honey in their abdomens hich become so distended as to appear like small pellucid grapes. Later the season when food is scarce hese ants are devoured by the others, nd they are also dug up and eaten by ne inhabitants of the country.

Honeycomb, the hexagonal cell ormed by the hive bee for the recep-on of honey and for the eggs of the ueen bee, and a habitation for the rva of the insect till reaching matur-y.

Honey Dew, a viscid saccharine xudation which is often found in warm dry weather on the leaves and stems of plants, occurring on both trees and herbaceous plants. Orange and lemon plantations sometimes suffer great injury from the abundance of honey dew; and it has proved a cause of very great loss in the coffee plantations.

Honey Locust, Sweet Locust, or **Black Locust,** a forest tree belonging to the United States. The leaves are pinnated, divided into numerous small leaflets, and the foliage has a light and elegant appearance. This tree is especially remarkable for its formidable thorns, on which account it has been recommended for hedges.

Honeysuckle, a common shrub. It flowers from June to September. A cultivated variety is common in gardens. It is called also woodbine and by Milton twisted eglantine.

Hong-Kong, or **Hiang Kiang** (The Fragrant or Flowing Streams), a small island off the S. E. coast of China, in the province of Quang-Tong, now belonging to the British. It is situated at the mouth of the estuary that leads to Canton, from which it is distant S. E. 75 miles. It is about 10 miles in length and 7½ miles in breadth, and is separated from the mainland by a strait. On the N. side of the island, and situated on a magnificent bay is the thriving town of Victoria, where the great bulk of the population is centered. The town stretches for about four miles along the shore and also ascends the hillside and the faces of the ravines above. It is generally well built, with wide streets and handsome terraces, and there is a massive sea wall along the sea front. The position of the colony of Hong-Kong is peculiar; it is merely a great commercial entrepot, itself producing little either in the way of natural products or manufactured goods; but so admirable is its situation that it has become a center of distribution and collection for China and other neighboring regions, and is a place frequented by great ocean mail steamers from all parts of the world. Hong-Kong is a free port, and there are no returns of its total trade, the chief articles of which consist of cottons and opium as imports, tea and silk as exports. The foreign commerce is chiefly carried on with the United

States, Singapore, Japan, Great Britain, Australia, and Germany.

Hong-Kong was ceded to Great Britain by the treaty of Canton in 1841; and again by the treaty of Nanking in 1842. The government of the colony is vested in a governor, an executive council of six officials and two others, and a legislative council of seven officials and five others. The population on the first occupation of the place by the British was only 5,000. In 1901 it numbered 283,975. In view of requirements for the defense of Hong Kong a convention was signed at Pekin on June 9, 1898, leasing to Great Britain for 99 years from July 1 in that year a portion of Chinese territory 400 square miles in extent, including the port of Kaulung.

Honolulu, a city and capital of Hawaii, on the island of Oahu on Oahu Bay. It is the most important city in the Pacific islands and is an important entrepot for vessels, between the United States and Asiatic countries. Its harbor, one of the finest in the world, and accommodating the largest vessels, is formed by a deep basin in the coral reef which surrounds the island. The city is situated amid beautiful tropical surroundings and has an equable and healthful climate. Among the chief points of interest are the Palace, the Government Buildings, Roman Catholic cathedral, post-office, and the Bishop Museum, containing the celebrated feather cloaks of Kamehameha, valued at $150,000. There are numerous churches, public schools, public library, theater, daily and weekly newspapers, telephone and telegraph, banks, electric lights and street railways, and many commercial establishments. Pop. (1900) 39,306.

Honorius, Flavius, a Roman emperor; son of Theodosius the Great; born in A. D. 384. After the division of the empire, A. D. 395, Honorius received the W. half. The principal events of his reign are the adoption of rigorous measures against paganism in 399; the invasion by Alaric in 400–403; another irruption of barbarians under Rhadagaisus, 405–406. Alaric marched on Rome and plundered it in 409, while Honorius shut himself up in Ravenna. Some of the finest provinces of the empire, Spain, Gaul, and Pannonia, were lost in this reign. H died in A. D. 423.

Hooch, or **Hoogh, Pieter de,** on of the best Dutch painters in genre born in 1630. He was peculiarly suc cessful in depicting scenes, illuminate by sunlight of Dutch domestic life He died about 1681.

Hood, Alexander, an English naval officer; born in 1727. During th American War of Independence h served much under Keppel, Rodney and Howe, in the Channel and th Strait of Gibraltar. He died May 3 1814.

Hood, John Bell, an America military officer; born in Owenville Ky., June 1, 1831; was graduate at West Point in 1853. He entere the Confederate army, commanded a brigade, and was severely wounde at Gaines's Mills, at Gettysburg, an at Chickamauga, where he lost a le and was made Lieutenant-General. H commanded a corps under Gen. J. E Johnston in the retreat to Atlanta, an in July, 1864, succeeded him in command of the army. On Sept. 1 he wa compelled to evacuate the city, an leave the road free for Sherman' march to the sea. He yet made a bold attempt to cut Sherman's communications, and, though worsted a Franklin on Nov. 30, pushed as far N as Nashville; but here he was agai defeated by Thomas on Dec. 16, and a his own request he was relieved o command. He died in New Orleans, Aug. 30, 1879.

Hood, Robin, a chivalrous outlaw of the reign of Richard I., of England. His exploits in Sherwood Forest are the subject of many admired ballads. All the popular legends celebrated his generosity and skill in archery. There is no historical evidence that Robin Hood ever existed, but no doubt there were many outlaws of his type in the period to which the legends ascribe his exploits.

Hood, Samuel Viscount, a British naval officer; born in Butleigh, England, Dec. 12, 1724; joined the navy when a boy. He was created a baronet in 1778 and promoted rear-admiral of the blue in 1780. In the following year he fought an indecisive battle with De Grasse near North Carolina; was a member of

Parliament in 1784–1788 and was relected in 1790; and was raised to he peerage in 1796. He died in Bath, England, Jan. 1816.

Hood, Thomas, an English poet nd humorist; born in London, in 1798. During a residence at Dundee, nd while only 15 or 16 years of age, he contributed articles to a local paper nd magazine. From 1829 to 1837 he onducted his "Comic Annual." At he same time his pen was employed on other subjects. It was during his last llness that he contributed to "Punch" 'The Song of a Shirt," "The Bridge of Sighs," and "The Lay of a Laborr." Hood is unrivalled as a punster, nd he possesses a singular power of ombining the humorous with the pahetic. He had the satisfaction of knowing that the pension of $500 conerred upon him on his last illness by Sir Robert Peel was to be transerred to his wife. He died in 1845.

Hooded Seal, a species of seal, the male of which possesses a movable, nflatable, muscular bag, stretching rom the muzzle to about five inches behind the eyes. Its usual range exends in America S. to Newfoundland, nd in Europe to Southern Norway.

Hoofs, the horny tissues which constitute the external part of the feet of certain animals, mostly herbivorous.

Hookah, the water tobacco-pipe of Arabs, Turks, Persians, Hindus, and other Orientals. It consists of a bowl for the tobacco, a water-bottle, and a ong flexible tube ending in the mouthpiece. A wooden tube leads from the bottom of the head or bowl down into he water in the bottle, and the flexible ube is continued downward by a stiff ube into the space above the water in he bottle. Thus the smoke is cooled before it reaches the mouth of the smoker.

Hooke, Robert, an English phiosopher; born in Freshwater, Isle of Wight, July 18, 1635. There was no mportant invention by any philosopher of that time which was not in part anticipated by Hooke. His theory of gravitation subsequently formed part of Newton's; he anticipated the nvention of the steam engine, and he discovery of the laws of the contrained motions of planets. He died n Gresham College, March 3, 1703.

Hooker, Mount, a peak in the Rocky Mountains in Canada; 15,690 feet high; on the E. boundary of British Columbia.

Hooker, Isabella Beecher, an American philanthropist; born in Litchfield, Conn., Feb. 22, 1822; daughter of Rev. Dr. Lyman Beecher. She made a life study of woman's rights and duties.

Hooker, Joseph, an American military officer; born in Hadley, Mass., Nov. 13, 1814; was graduated at the United States Military Academy, in 1837, and served in the Florida and Mexican Wars. In 1853 he resigned from the army, but on the outbreak of the Civil War he reëntered it. He fought under McClellan and in Northern Virginia and Maryland, receiving a wound at the battle of Antietam. On account of his bravery his soldiers nicknamed him "Fighting Joe Hooker." In 1863, he was made commander of the Army of the Potomac, and in May he fought the bloody battle of Chancellorsville, in which nearly 30,000 were killed or wounded. Owing to a difference between himself and General Halleck, Hooker resigned his command (1863), but he still served as Major-General, and fought under Grant at Chattanooga, and under Sherman at Atlanta. In 1868 he retired from the army. He died in Garden City, N. Y., Oct. 31, 1879.

Hooker, Thomas, an English clergyman; born in Markfield, Leicestershire, in 1586. He came to America in 1633. In 1636 removed from Newtown (Cambridge, Mass.) to Hartford, and founded that colony, becoming minister of the First Church there. He won eminence as a theological writer and a preacher, and has a permanent historical importance for his instrumentality in drawing up the first written constitution in America — that of the Hartford Colony. He died in Hartford, Conn., July 7, 1647.

Hoop-ash, an American tree found in the forests of Ohio and in the Western States. It is a fine tree, attains a height of 80 feet, and is employed for charcoal.

Hooper, Johnson, an American lawyer and author; born in North Carolina about 1815; died in Alabama in 1863.

Hooper, Lucy, an American poet; born in Newburyport, Mass., Feb. 4, 1816. Her complete poems appeared in 1848. She died in Brooklyn, N. Y., Aug. 1, 1841.

Hooper, Lucy Hamilton (Jones), an American poet and novelist; born in Philadelphia, Pa., Jan. 20, 1835; was for some time assistant editor of "Lippincott's Magazine." Her husband being United States vice-consul-general in France, she resided after 1874 in Paris, where she was correspondent for several American newspapers. She died in Paris, France, Aug. 31, 1893.

Hooper, William, an American patriot; born in Boston, Mass., June 17, 1742; was graduated at Harvard College in 1760; practised law in North Carolina and early interested himself in the colonial struggle with Great Britain; was elected to the Continental Congress in 1774 and signed the Declaration of Independence July 4, 1776. He died in Hillsboro, N. C., October, 1790.

Hooping Cough, a spasmodic, infectious disease, usually of childhood, preceded by catarrh of from 3 to 14 days' duration. It sometimes terminates in six weeks, but often lasts as many months.

Hoopoe, a bird forming the type of a family generally classed with the bee-eaters or the honey-eaters, but also with the horn-bills. The hoopoe is about 12 inches long; it has a fine crest of pale cinnamon-red feathers, tipped with black; upper surface on the whole ashy-brown; wings black, the coverts having white bars; throat and breast pale fawn; abdomen white, with black streaks and dashes. It has a very wide range, from Burma to the British Islands and Africa.

Hoosac Mountain, a part of the Green Mountain range in Western Massachusetts, through which is pierced the most notable railway tunnel in America. The Hoosac tunnel, which has a length of nearly 5 miles, was commenced in 1851 for the line between Boston and Albany, was twice abandoned, and was finally opened in 1875, having cost the State of Massachusetts about $18,000,000.

Hoosier State, a name for Indiana. The people of the State are called "Hoosiers," a word said to be a co ruption of "hussar," or "husher formerly a colloquial name for a figh er or a bully throughout the West.

Hop, a plant of the hemp famil The root, which is perennial, annual sends forth long, weak, rough, twinin stems. The hop grows in the Unite States, in England, Belgium, and B varia. It is sometimes prescribed a tonic. Hops are boiled with th wort in brewing beer. They impart bitter taste and aromatic flavor, an prevent fermentation from being to rapid. They owe their effect to chemical principle called lupuline.

Hop Clover, a plant distinguishe from other species of clover by i bunch of yellow flowers, which withe to the bright brown of a strobile hops.

Hop Flea, or **Tooth-legge Beetle,** a very small, coleopterou insect, not quite one-tenth of an inc long, which often does much mischi in hop plantations in spring, devou ing the tender tops of the youn shoots. It is of the same genus as th turnip fly, so destructive to turnips.

Hopkins, Alphonso Alvah, a American author; born in Burlingto Flats, N. Y., March 27, 1843.

Hopkins, Edward Washbur an American educator; born in Northampton, Mass., in September, 1857 became Professor of Sanskrit at Yal successor of Professor Whitney; h wrote several learned works on th religions of India, etc.

Hopkins, Esek, first admiral c the American navy; born in Rhode I land in 1718. He was appointed i 1775, by the Continental Congres commander-in-chief of the navy, wit the rank of admiral; performed se eral notable exploits, but failing i other undertakings he was removed i 1777 on the ground of incompetenc He died at Providence in 1802. monument was erected to his memor some years ago.

Hopkins, Henry, an American educator; born in Williamstown, Mass Nov. 30, 1837; was graduated at Wi liams College in 1858; studied for tw years in the Union Theological Seminary in New York city; and was ordained in the Congregational Churc in 1860. In 1861 he was commissione chaplain in the Union army, and rved in the hospital in Alexandria, ., till 1864, when he was appointed aplain of the 120th New York vol- teers. He was chosen president Williams College, Williamstown, ass., on Jan. 17, 1902.

Hopkins, John Henry, an Amer- n clergyman and author; born in ublin, Ireland, Jan. 30, 1792. He s consecrated the first Protestant iscopal bishop of Vermont in 1832. ed in Rock Point, Vt., Jan. 9, 1868.

Hopkins, Johns, an American phil- thropist; born in Anne Arundel ., Md., May 19, 1795. In 1873 he ve property worth $4,500,000 to und a free hospital; he presented ltimore with a public park, and he so gave over $3,000,000 to found the hns Hopkins Universty in Balti- ore. He died Dec. 24, 1873.

Hopkins, Mark, an American ed- ator; born in Stockbridge, Mass., b. 4, 1802. He was president of illiams College in 1836–1872, and r 30 years president of the Ameri- n Board of Commissioners for For- n Missions. He died in Williams- wn, Mass., June 17, 1887.

Hopkins, Moses Aaron, an Amer- n clergyman; born in Montgomery ., Va., Dec. 25, 1846; was of Afri- n descent and born a slave; learned read at 20; and became an evan- list. In 1885 he was appointed ited States Minister to Liberia. He d in Monrovia, Siberia, Aug. 3, 86.

Hopkins, Stephen, an American tesman; born in Providence, R. I., arch 7, 1707. In 1732 he was elected representative to the General As- nbly from Scituate, and was chosen eaker of that body in 1741. In 1751 was appointed chief-justice of the perior court of Rhode Island, and, 1756, was elected governor. He ned the Declaration of Independ- ce. After this he was several times osen a member of Congress. He d in Providence, July 13, 1785.

Hopkinson, Francis, an Ameri- n political writer; born in Phila- lphia, Sept. 21, 1737. His humor- s ballad, "The Battle of the Keg," s widely known. He was one of the ners of the Declaration of Inde- ndence. He died May 9, 1791.

Hopkinson, Joseph, an American jurist, son of Francis; born in Philadelphia, Nov. 12, 1770; was one of the ablest lawyers of his day. He wrote the famous patriotic song, "Hail Columbia" (1798), for the benefit of an actor, calling it at first the "President's March." He died in Philadelphia, Jan. 15, 1842.

Hopper, Isaac Tatem, an American philanthropist; born in Deptford, N. J., Dec. 3, 1771; joined the Hicksite branch of the Quaker sect; early distinguished himself as a benefactor of slaves, convicts and the poor, and was long treasurer of the Anti-Slavery Society. He died in New York city, May 7, 1852.

Hoppin, Augustus, an American illustrator and author; born in Providence, R. I., July 13, 1828. He was originally a lawyer. Besides illustrating works by many well-known authors, he illustrated his own books. He died in 1896.

Hoppin, James Mason, an American educator and writer; born in Providence, R. I., Jan. 17, 1820. He was a Congregational clergyman and professor at Yale University.

Hop Tree, an American shrub of the rue family, also called shrubby trefoil, is planted as an ornamental plant. Its fruit is intensely bitter, and is a poor substitute for hops.

Horatii, three Roman brothers, who, according to tradition, in the reign of Tullus Hostilius engaged three Alban brothers (the Curiatii), in order to decide the supremacy between Rome and Alba. Victory went to Rome, and the sole surviving Horatius was triumphantly conducted back to the city. But his sister had been betrothed to one of the Curiatti, and her demonstrative grief so enraged Horatius that he stabbed her. For this he was condemned to death, but his father and the people obtained his pardon.

Horatius Cocles, a hero of ancient Rome. When the Etrurian King Porsenna advanced against Rome (507 B. C.), tradition relates that a hero of this name, along with Spurius Lartius and Titus Herminius, held the Sublician bridge over the Tiber against the enemy, while the Romans were breaking it down behind them. When the work was nearly finished Horatius sent back his two companions, and continued to defend the bridge till the crashing of the falling timbers and the shouts of the Romans announced the completion of the work. Though enfeebled by wounds he then plunged into the stream with his armor, and in the midst of the darts of the enemy reached the opposite bank of the Tiber in safety.

Horatius Flaccus, Quintus, a Latin lyric poet, commonly known by the name of Horace; born near Venusia, a city lying on the borders of Lucania and Apulia, Dec. 8, 65 B. C. Poverty drove him to poetry. The talent which he displayed procured him the friendship of two eminent poets, Virgil and Varius, and to them he was indebted for his first acquaintance with Mæcenas, a refined man of the world, who was the friend and confidant of Augustus Cæsar, and who expended his wealth willingly for the encouragement of literature and the arts. Nine months after, Mæcenas received Horace into the circle of his intimate friends and after some years presented him with the Sabine estate, which Horace so often mentions in his poems. It was sufficient to maintain him in ease and comfort during the rest of his life. He died Nov. 17, 8 B. C., the same year as his friend and patron Mæcenas, near whose tomb in the Esquiline he was buried. In appreciating Horace as a lyric poet it must not be forgotten that he was the first among the Romans who formed the Roman language for lyric poetry and applied it with no small labor to the difficult Greek meters. Uninterrupted study and perseverance only could have effected so masterly a structure of the verse. It is said, indeed, and it cannot be denied, that the greater part of the odes of Horace are only imitations or translations of Greek lyrists — Archilochus, Alcæus, Stesichorus, Sappho, and others. Many have made use of this objection to detract from the poetical fame of Horace. But granting that originality cannot be attributed to Horace as a lyric poet, no one can deny it to him as a satirist. As didactic satire in general was a Roman invention, so it was Horace, who, following Ennius, Pacuvius, and Lucilius, by whom its form and object had been defined, ga it a tone and polish of its own.

Horeb, a mountain belonging to t same ridge as Mount Sinai, where still pointed out the rock from whi water issued at the blow of Moses.

Horehound, or **Hoarhound,** botany, a plant so hoary as to be a most woolly. The plant contains bitter principle and a volatile oil. is used as a tonic, expectorant, a alternative for coughs. In the for of infusion or of bitter-sweet lozenge it is a popular remedy for coughs.

Horizon, the visual circle of t firmament.

Horn, a substance which may divided into two distinct classes. Firs the branched, bony horns of the st genus, and the simple, laminated hor of the ox genus, and other kindr genera. The first of these kinds horn is applied to the same purpos as bone and ivory, and the manufa ture is almost similar. The other ki of horn, found in the ox, antelop goat, and sheep, consists of a numb of conical sheaths inserted one in another, the innermost resting up the vascular membrane covering t bony core. The tip is very dense, a the layers of which it is composed a scarcely distinguishable. This kind horn appears to consist of coagulat albumen; and there is a regular co nection between horns, nails, claw hoofs, scales, hair, feathers, and ev skin. The horns of oxen are the pri cipal ones used for manufacturi purposes; the horns of bulls and co being preferred to those of bullock which are thin and of a coarse te ture. The horns of goats and shee are whiter and more transparent tha those of other animals.

Horn Cape, commonly spoken as the extreme S. point of Americ is a steep, black, bare mountain hea land of one of the small islands of t Fuegian Archipelago. The dangero doubling of Cape Horn is avoided steamers, which now pass through t Strait of Magellan.

Horn, Charles Edward, an A glo-American musician; born in Lo don, England, in 1776; achieved su cess as a singer from 1809 to 181 and wrote popular songs. He died Boston, Mass., June 10, 1848.